BLACKETT MAGUIRE+ GOLDSMITH

BCA ASSESSMENT REPORT

3 Quarry Rd, Dural

Prepared for:

thelem CONSULTING

June 2018

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REPORT STATUS				
DATE	**REVISION**	**STATUS**	**AUTHOR**	**REVIEWED**
13/06/2018	-	BCA Report for DA Submission	PC	BM
14/06/2018	1	Updated based on client feedback	PC	BM

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Brian Maguire
Director
Blackett Maguire + Goldsmith

1.0 INTRODUCTION

1.1 PROPOSAL

Blackett Maguire + Goldsmith Pty Ltd have been commissioned by Thelem Consulting to undertake an assessment of the proposed construction of a new 74 bed RACF and 156 Independent Living Units at 3 Quarry Rd, Dural against the relevant provisions of the Building Code of Australia 2016 Amendment 1.

1.2 AIM

The aim of this report is to:

+ Undertake an assessment of the proposed development against the deemed-to-satisfy provisions of the BCA;
+ Identify matters that require plan amendments Performance Solutions in order to achieve compliance with the BCA;
+ Enable the certifying authority to satisfy its statutory obligations under Clause 143(1)(3) of the Environmental Planning and Assessment Regulation, 2000
+ Enable the certifying authority to satisfy its statutory obligations under Clause 145 of the Environmental Planning and Assessment Regulation, 2000.

1.3 PROJECT TEAM

The following BM+G Team Members have contributed to this Report:

+ Patrick Cameron (Building Surveyor) - Report Preparation
+ Brian Maguire (Director) - Peer Review

1.4 REFERENCED DOCUMENTATION

The following documentation has been reviewed, referenced and/or relied upon in the preparation of this report:

+ Building Code of Australia 2016, Amendment 1 (BCA).
+ The Guide to the Building Code of Australia 2016, Amendment 1 (BCA Guide).
+ Architectural Plans prepared by Marchese Partners numbered:

Drawing No.	Revision	Date	Drawing No.	Revision	Date
DA1.01	F	23.05.2018	DA1.03	F	23.05.2018
DA1.04	F	23.05.2018	DA1.05	F	23.05.2018
DA1.06	F	23.05.2018	DA1.07	F	23.05.2018
DA2.4	F	23.05.2018	DA2.05	F	23.05.2018
DA2.06	F	23.05.2018	DA2.07	F	23.05.2018
DA2.08	F	23.05.2018	DA2.09	F	23.05.2018
DA2.10	F	23.05.2018	DA2.11	F	23.05.2018
DA2.12	F	23.05.2018	DA2.13	F	23.05.2018
DA2.14	F	23.05.2018	DA2.15	F	23.05.2018
DA2.16	F	23.05.2018	DA2.17	F	23.05.2018
DA2.18	F	23.05.2018	DA2.19	F	23.05.2018
DA2.20	F	23.05.2018	DA2.21	F	23.05.2018
DA2.22	F	23.05.2018	DA2.23	F	23.05.2018
DA2.24	F	23.05.2018	DA2.25	F	23.05.2018
DA2.26	F	23.05.2018	DA2.27	F	23.05.2018
DA2.28	F	23.05.2018	DA3.01	F	23.05.2018
DA3.03	F	23.05.2018	DA4.01	F	23.05.2018
DA4.02	F	23.05.2018	DA4.03	F	23.05.2018

1.5 REGULATORY FRAMEWORK

Pursuant to clause 145 of the Environmental Planning and Assessment (EPA) Regulation 2000 all new building work must comply with the current BCA however the existing features of an existing building need not comply with the BCA unless upgrade is required by other clauses of the legislation.

Clause 143(3) of the EP&A Regulation 2000 prevents a certifying authority from issuing a construction certificate if the proposed new work will result in a reduction to the fire protection and structural capacity of the building.

1.6 ASSESSMENT METHODOLOGY

The BCA assessment was carried out in tabulated form in APPENDIX 1 below. The documents were assessed against the BCA 2016, Amendment 1 requirements and the findings were detailed under the 'Comment' column.

1.7 LIMITATIONS AND EXCLUSIONS

The limitations and exclusions of this report are as follows:

+ No assessment has been undertaken with respect to the Disability Discrimination Act 1992 (DDA). The building owner needs be satisfied that their obligations under the DDA have been addressed.

  Please note that whilst the BCA specifies a minimum standard of compliance with AS1428 (Parts 1-3) and Part D3 of the BCA for access and facilities for people with disabilities, compliance with such requirements may not necessarily preclude the possibility of a future complaint made under the DDA 1992. The DDA is a complaint based legislation and is presently not identified by the State Building Codes and Regulations. In this regard the building owner should be satisfied that their obligations under the DDA have been addressed.

+ BM+G has not undertaken an assessment of any Alternative Solution Reports at the time of the preparation of this report.
+ The Report does not address matters in relation to the following Local Government Act and Regulations:
  i. Occupational Health and Safety Act and Regulations.
  ii. Work Cover Authority requirements.
  iii. Water, drainage, gas, telecommunications and electricity supply authority requirements.
  iv. Disability Discrimination Act 1992.
+ Blackett Maguire + Goldsmith Pty Ltd cannot guarantee acceptance of this report by Local Council, Fire & Rescue NSW or other approval authorities.
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1.8 REPORT TERMINOLOGY

Building Code of Australia (BCA) - Document published on behalf of the Australian Building Codes Board. The BCA is a uniform set of technical provisions for the design and construction of buildings and other structures throughout Australia and is adopted in NSW under the provisions of the Environmental Planning & Assessment Act & Regulation.

Climatic Zone – Is an area defined in BCA Figure A1.1 and in Table A1.1 for specific locations, having energy efficiency provisions based on a range of similar climatic characteristics.

Construction Certificate – Building Approval issued by the Certifying Authority pursuant to Part 4A of the EP&A Act 1979.

Construction Type – The construction type is a measure of a buildings ability to resist a fire. The minimum type of fire-resisting construction of a building must be that specified in Table C1.1 and Specification C1.1, except as allowed for—

(i) certain Class 2, 3 or 9c buildings in C1.5; and

(ii) a Class 4 part of a building located on the top storey in C1.3(b); and

(iii) open spectator stands and indoor sports stadiums in C1.7.

Note: Type A construction is the most fire-resistant and Type C the least fire-resistant of the types of construction.

Deemed-to-Satisfy (DTS) Provisions of the BCA – Means the prescriptive provisions of the BCA which are deemed to satisfy the performance requirements.

Effective Height – The vertical distance between the floor of the lowest storey included in the calculation of rise in storeys and the floor of the topmost storey (excluding the topmost storey if it contains only heating, ventilating, lift, or other equipment, water tanks or similar service units).

Exit – Any, or any combination of the following if they provide egress to a road or open space;

+ An internal or external stairway.

- A ramp.
- A fire-isolated passageway.
- A doorway opening to a road or open space.

Fire Compartment – The total space of the building; or when referred to in

- The Performance Requirements – any part of a building separated from the remainder by barriers to fire such as walls and/or floors having an appropriate resistance to the spread of fire with any openings adequately protected; or
- The Deemed-to-Satisfy Provisions – any part of a building separated from the remainder by walls and/or floors each having an FRL not less than that required for a fire wall for that type of construction and where all openings in the separating construction are protected in accordance with the Deemed-to-Satisfy Provisions of the relevant part.

Fire Resistance Level (FRL) – The grading periods in minutes for the following criteria-

(a) structural adequacy; and

(b) integrity; and

(c) insulation,

and expressed in that order

Fire Source Feature (FSF) - The far boundary of a road adjoining the allotment; or a side or rear boundary of the allotment; or an external wall of another building on the allotment which is not a Class 10 building.

National Construction Code Series (NCC) – The NCC was introduced 01 May 2011 by the Council of Australian Governments. The BCA Volume One (Class 2 to 9 Buildings) is now referenced as the National Construction Code Series Volume One — BCA.

Occupation Certificate **(OC)** – Building Occupation Approval issued by the Principal Certifying Authority pursuant to Part 4A of the EP&A Act 1979.

Open Space - Means a space on the allotment, or a roof or other part of the building suitably protected from fire, open to the sky and connected directly with a public road.

Performance Requirements of the BCA - A Building Solution will comply with the BCA if it satisfies the Performance Requirements. A Performance requirement states the level of performance that a Building Solution must meet.

Compliance with the Performance Requirements can only be achieved by-

(a) complying with the Deemed-to-Satisfy Provisions; or

(b) formulating an Alternative Solution which-

(i) complies with the Performance Requirements; or

(ii) is shown to be at least equivalent to the Deemed-to-Satisfy Provisions; or

(c) a combination of (a) and (b).

Performance Solution – A Building Solution which complies with the Performance Requirements other than by reason of satisfying the DtS Provisions.

Rise in Storeys – The greatest number of storeys calculated in accordance with C1.2.

Sole Occupancy Unit – means a room or other part of a building for occupation by one or joint owner, lessee, tenant, or other occupier to the exclusion of any other owner, lessee, tenant, or other occupier and can include a dwelling and/or office suite

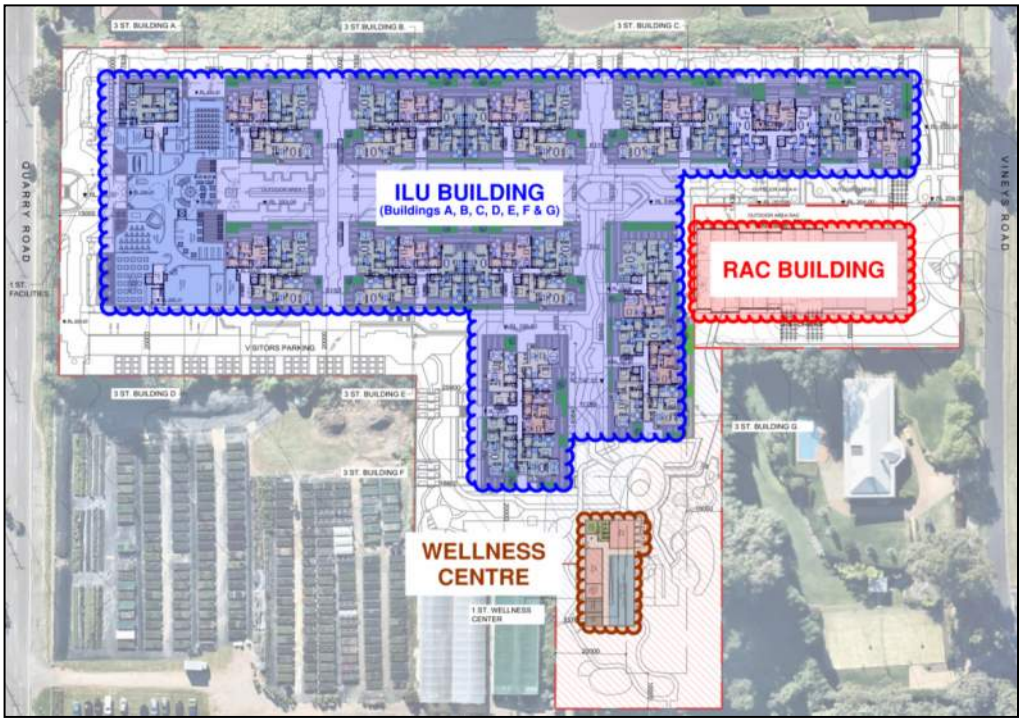
2.0 BUILDING CHARACTERISTICS

2.1 PROPOSED DEVELOPMENT

The proposed development involves the construction of a new aged care village which comprising of:

+ **RAC Building:** Three (3) storey Residential Aged Care Facility (RACF) containing 74 beds, situated over a lower level carpark and back of house areas.
+ **Wellness Centre –** Single storey community building containing communal pool, gym, spa hair salon and physiotherapy spaces
+ **ILU Buildings:** Seven (7) x three (3) and four (4) storey residential Independent Living Units (known as Buildings A, B, C, D, E, F & G) containing 156 units and community facilities, situated over common basement car parking levels

  Note: For the purpose of BCA assessment, Buildings A – G constitute a single united building by virtue of their connection via the common basement carpark.



2.2 BUILDING CLASSIFICATION

The building is classified as follows:

BCA CLASSIFICATION:	RAC Building: Class 9c; Class 7a Wellness Centre: Class 9b; Class 10b ILU Building: Class 2; Class 7a; Class 9b
RISE IN STOREYS:	RAC Building: Four (4) Wellness Centre: One (1) ILU Building: Three (3)
TYPE OF CONSTRUCTION:	RAC Building: Type A Wellness Centre: Type C ILU Building: Type A
IMPORTANCE LEVEL (STRUCTURAL):	RAC Building: 2 Wellness Centre: 2 ILU Building: 2
SPRINKLER PROTECTED:	RAC Building: Required throughout all levels Wellness Centre: Not required ILU Building: Required in the basement carpark only
AUTOMATIC AIR PRESSURISATION FOR FIRE-ISOLATED EXITS.	RAC Building: Required if fire isolated stairs are proposed Wellness Centre: Not applicable / required ILU Building: Not required
EFFECTIVE HEIGHT:	RAC Building: Less than 12m (TBC) Wellness Centre: Less than 12m ILU Building: Greater than 12m, but less than 25m
FLOOR AREA:	RAC Building: TBC Wellness Centre: TBC ILU Building: TBC
MAX. FIRE COMPARTMENT SIZE:	RAC Building: Not applicable to the ILUs or the sprinkler protected carpark. A maximum fire compartment size of 3,000m^2 & 18,000m^3 is applicable for the Class 9c part Wellness Centre: 3,000m^2 & 18,000m^3 (complies) ILU Building: Not applicable to the ILUs or the sprinkler protected carpark. A maximum fire compartment size of 3,000m^2 & 18,000m^3 is applicable for the Class 9b part contained in Building A
CLIMATE ZONE:	Zone 5

2.3 MATTERS REQUIRING CONFIRMATION, REDESIGN OR ADDITIONAL INFORMATION AT THE CONSTRUCTION CERTIFICATE STAGE:

The following comprises a summary of the key compliance issues identified under the clause-by-clause assessment in APPENDIX 1 of this report that will be addressed prior to issue of the Construction Certificate(s) for the project.

BCA Clause		Description
1.	**C1.9**	RAC Building and ILU Buildings – Non-loadbearing fire rated internal walls and external walls including all elements incorporated in them (facade covering, framing, sarking and insulation) are required to be non-combustible or of materials complying with the concessions under Clause C1.9(e).
2.	**C1.14**	Ancillary Elements (i.e. elements that are secondary to and not an integral part of another element to which it is attached) other than those provided with a concession under the clause are required to be non-combustible or of materials complying with the concessions under Clause C1.9(e).
3.	**C2.5**	All smoke compartments are to be <500m2. Detailed smoke and fire compartment plans will be required at the Construction Certificate stage which detail compliance with the requirements of Specification C2.5 and C3.4. *Note 1:* Smoke doors are to swing in either both directions or in the direction of egress. *Note 2:* The proposed voids within the building will need further review at the Construction Certificate stage to ensure that they do not connect more than 2 storeys whether directly or indirectly and that they are suitable smoke sealed.
4.	**C2.6**	Spandrel protection is required throughout the ILU Buildings either by way of a 60/60/60 FRL vertical spandrel or horizontal projection (balcony) complying with the requirements of this clause.
5.	**C2.8**	Building classifications situated adjacent to each other in the same storey are required to adopt the higher FRL prescribed in Specification C1.1 or have the parts of the building separated by a fire wall which achieves the higher FRL of the Classifications as prescribed in Specification C1.1. Fire compartment plans detailing compliance with the above are required at the Construction Certificate stage.
6.	**C2.9**	The floors between different classifications need to be fire rated in accordance with Specification C1.1.
7.	**C3.3**	External walls of fire compartments within the ILU Buildings which are exposed to each other are to be protected in accordance with Table C3.3.
8.	**D1.4**	The location/number of exits is to be amended in the RAC so that travel distances to a point of choice between alternative exits and to alternative exits is justifiable by a Fire Engineered Performance Solution.
9.	**D1.5**	The location/number of exits is to be amended in the RAC so that the following travel distances to a point of choice between alternative exits and to alternative exits is justifiable by a Fire Engineered Performance Solution.
10.	**D1.6**	The minimum dimensions throughout the development (as specified by this clause) are to be detailed on the plans submitted with the Construction Certificate. Particular attention is to be paid to ensure that 870mm unobstructed doors widths are achieved within the resident use areas of the RAC Building and that a minimum 1m unobstructed width is achieved between the 2 required handrails for non-fire isolated stairs.
11.	**D1.7**	Should fire-isolated stair be pursued for the RAC Building, paths of travel are to be provided from the point of discharge from these stairs that does not result in occupants passing within 6m of the building (when measured horizontally from the path of travel). The above-mentioned paths are to be detailed on the plans submitted with the Construction Certificate application.
12.	**D1.8**	Further discussion is required to determine if external stairs are going to be pursued in lieu of fire isolated exits within the RACF
13.	**D1.10**	Paths of travel to the road from exits are to be detailed on the plans submitted with the Construction Certificate.
14.	**D2.20**	A swing door in a required exit must swing in the direction of egress. There are a number of instances where doors swing against the direction of egress and as such details are to be provided illustrating compliance at the construction Certificate stage.
15.	**D3**	Access to and within the development is to be reviewed by the project Access Consultant.
16.	**D3.5**	Accessible carparking space are to be provided in accordance with AS2890.6, in this instance there are multiple accessible spaces within the Basement carparks that are obstructed by columns, accordingly compliance is to be demonstrated at the Construction Certificate stage.

BCA Clause		Description
17.	**E1.3**	The following is to be detailed on the Construction Certificate architectural plans: + The final location of the fire hydrant booster assembly to determine sight line to main entry and distance to building. + The location of the hydrant pump room, noting that it is required to be accessible directly from the road or open space, or from a door opening from a fire isolated exit.
18.	**E1.5**	The location of the sprinkler valve is to be confirmed noting that BCA Specification E1.5 requires it be located such that it provides fire fighting personnel with direct egress to/from the road or open space. If the valves are proposed to be located within the pump room, a **Fire Engineered Performance Solution** will be required to justify this departure.
19.	**E2.2**	Where fire-isolated stairs are provided for the RAC Building, stair pressurisation will be required, noting that the stairs connect 3 storeys.
20.	**F2.1 / F2.2 / F2.3**	Plans submitted with the Construction Certificate are include facilities for the Class 2, 9b and 9c parts as required by this Clause.
21.	**F2.8**	Dirty Utility rooms are to be detailed on each storey of the RAC Building containing resident use areas. These rooms are to contain a minimum of one slop-hopper or other device other than a water closet pan or urinal for the safe handling and disposal of liquid and solid wastes with a flushing apparatus, tap and grating; and an appliance for the disinfection of pans or an adequate means to dispose of receptacles
22.	**F4.1**	Windows which provided an aggregate light transmitting area of not less than 10% of the floor area of the room are to be detailed on the Construction Certificate plans for: + all habitable rooms within Class 2 SOUs in the ILU Buildings; and + all rooms used for sleeping purposes in the RAC Building.
23.	**F4.2**	Windows to all rooms used for sleeping purposes in the RAC Building must be transparent and located in an external wall with a window sill not higher than 1m.

2.4 MATTERS REQUIRING FIRE SAFETY ENGINEERED PERFORMANCE SOLUTIONS:

The following comprises a summary of the key compliance issues identified under the clause-by-clause assessment in APPENDIX 1 of this report that will be addressed as Fire Engineered Performance Solutions:

BCA Clause		Description
1.	**D1.4**	The following areas exceed the maximum permitted travel distance to an exit or point of choice between alternative exits: ILU Buildings + Class 2 parts - up to 11.5m to an exit from Levels 1-3 in lieu of the DtS maximum of 20m. + Class 7a parts - up to 27m to a point of choice between alternative exits in lieu of the DtS maximum of 20m and up to 57m to an alternative exit in lieu of the DtS maximum of 40m. + Class 9b part – up to 25m to a point of choice between alternative exits in lieu of the maximum 20m. RAC Building + Class 9c part - up to 22m to a point of choice between alternative exits in lieu of the maximum 20m subject to the location/number of exits being amended. + Class 7a (basement) part – up to 30m to a point of choice between alternative exits in lieu of the maximum 20m subject to the location/number of exits being amended.
2.	**D1.5**	The following areas exceed the maximum permitted distance between alternative exits: ILU Buildings + Class 7a parts - up to 75m between alternative exits in lieu of the DtS maximum of 60m.
3.	**Spec C3.4**	Smoke doors in the RAC Building do not swing in the direction of egress.
4.	**E1.5**	If the sprinkler valves are proposed to be located within the pump room, a Fire Engineered Performance Solution will be required to justify this departure i.e. access to be sprinkler valves being via a fire-isolated stair in lieu of directly from open space.

2.5 MATTERS REQUIRING PERFORMANCE SOLUTIONS *(OTHER THAN FIRE ENGINEERING)*

The following comprises a summary of the key compliance issues identified under the clause-by-clause assessment in APPENDIX 1 of this report that will be addressed as Performance Solutions:

BCA Clause		Description
1.	**D3.8**	The main entry interface between the vehicular way and the pedestrian entry requires TGSIs. Given the nature of the aged care occupant, TGSIs are an unwanted potential trip hazard and as such, consideration may be given to the formulation of a Performance Solution by an Accredited Access Consultant
2.	**FP1.4**	The external walls will need to be assessed for compliance against this Performance Requirement.
3.	**F2.4**	Where operational requirements of the RAC Building facility require partially or fully assisted ensuites. A Performance Solution will be required to address the required percentage of accessible rooms/ensuites which will not be designed in accordance with AS1428.1-2009.

3.0 CONCLUSION

This report contains an assessment of the referenced architectural documentation for the proposed Seniors Living Village at 3 Quarry Road, Dural against the deemed-to-satisfy provisions of the Building Code of Australia 2016 Amendment 1 (BCA).

Arising from the assessment, key compliance issues have been identified that require resolution, either by way of Fire Engineered Performance Solutions or plan amendments prior to the Construction Certificate stage.

Notwithstanding the above, it is considered that the proposed development can readily achieve compliance with the BCA subject to resolution of the matters identified under Section 9 & APPENDIX 1 of this report.

APPENDIX 1

CLAUSE-BY-CLAUSE BCA ASSESSMENT

KEY:

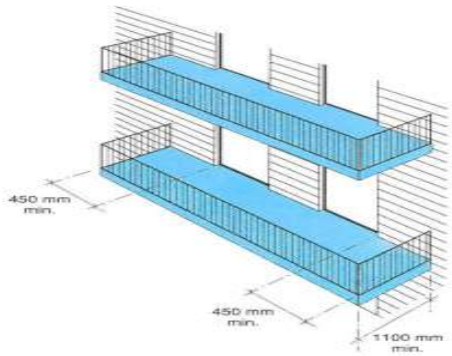
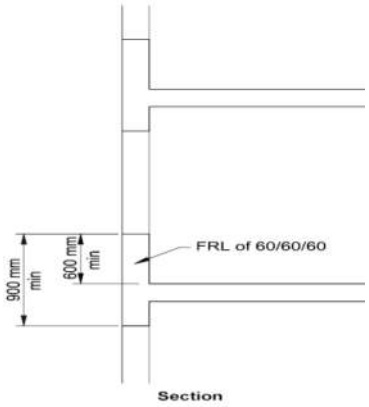
+ **Complies**:	The referenced plans show compliance with this clause
+ **Compliance Readily Achievable**:	The referenced plans do not show sufficient information to establish compliance with this clause. Design certification, should be submitted with the application for the Construction Certificate
+ **Further Information Required:**	The referenced plans do not show sufficient information to establish compliance with this clause. Further details, should be submitted with the application for the Construction Certificate
+ **Performance Solution**:	The referenced plans do not comply with this clause and an Performance Solution is required/proposed to demonstrate compliance with the Performance Requirements
+ **Noted**:	Provisions contained within this BCA clause are provided for guidance, or are to be read in conjunction with other BCA clauses
+ **Not applicable/Not critical**:	This clause is not applicable or not critical to the proposed development. These clauses have been removed from the assessment table below.
+ **Does Not Comply**	The proposal does not comply with this clause and redesign is required.

Clause	Reference	Comment
SECTION B	**STRUCTURE**	
Part B1	***Structural Provisions***	
B1.2 Determination of individual actions	Structural engineering details prepared by an appropriately qualified structural engineer to be provided to demonstrate compliance with Part B1 in relation to the new structural elements of the building.	**Compliance Readily Achievable** Design Statement is to be provided confirming that the design achieves compliance with the following is required at the time of the Construction Certificate application, inclusive of reference to the following Australian Standards (where relevant): AS 1170.0 – 2002 General Principles AS 1170.1 – 2002, including certification for balustrading (dead and live loads) AS 1170.2 – 2002, Wind loads AS 1170.4 – 2007, Earthquake loads AS 3700 – 2001, Masonry code AS 3600 – 2009, Concrete code AS 4100 – 1998, Steel Structures and/or AS 4600 – 2005, Cold formed steel. AS 2047 – 1999, Windows in buildings. AS 1288 – 2006, Glass in buildings
B1.4 Determination of structural resistance of materials	Materials & Forms of Construction	**Compliance Readily Achievable:** Detail and design certification to be provided at the Construction Certificate stage.

Clause	Reference	Comment
SECTION C	**FIRE RESISTANCE**	
Part C1	***Fire Resistance and Stability***	
C1.1 Fire Resistance	The building works are required to comply with the requirements detailed in the relevant tables of Specification C1.1 + Table 3 is applicable for Type A construction + Table 5 for is applicable for Type C Construction	**Note Only**
C1.5 Two storey class 2,3 or 9c buildings	A building with a rise in storeys of 2 is a type C construction if it is a class 2 and/or 3 building and each sole-occupancy unit has access to at least 2 exits or its own direct access to a road or open space.	**Not applicable:** Concession does not apply.
C1.8 – Lightweight construction	Lightweight construction must comply with Specification C1.8 if used in a wall system in accordance with sub-clauses (a) & (b).	**Compliance Readily Achievable:** Detail to be provided at the Construction Certificate stage.
Clause C1.9 – Non-combustible Materials	The materials as set out in sub-clauses (a) to (e) of this clause, though combustible or containing combustible fibres, may be used wherever a non-combustible material is required. The following are examples of materials that may be used wherever a non-combustible material is required: + Plasterboard + Perforated gypsum lath with a normal paper finish + Fibrous plaster sheet + Fibre reinforced cement sheeting + Prefinished metal having a combustible surface finish not exceeding 1mm thickness and where the spread of flame index of the product is not greater than 0 + *Bonded laminated materials where each lamina, including any core, in non-combustible and each adhesive layer does not exceed 1mm in thickness and the total thickness of the adhesive layers does not exceed 2mm and the spread of flame index and the smoke developed index of the bonded laminated material as a whole do not exceed 0 and 3 respectively.*	**Compliance Readily Achievable:** Applicable to the RAC Building and ILU Buildings only. A statement and accompanying documentation including Test Reports will be required at the Construction Certificate stage which verify that that any non-loadbearing fire rated internal walls and all external walls of the RAC Building and ILU Buildings including the facade covering, framing, sarking and insulation walls are non-combustible or comply with the concessions under Clause C1.9 of the BCA.
C1.10 - Early fire hazard properties	The fire hazard properties of the outlined linings, materials and assemblies in a Class 2 to 9 building must comply with Specification C1.10	**Compliance Readily Achievable:** Detail to be provided at the Construction Certificate stage.

Clause	Reference	Comment
C1.14 Ancillary Elements	An ancillary element must not be fixed, installed or attached to the internal parts or external face of an external wall that is required to be non-combustible unless it is an ancillary element that is non-combustible.	**Compliance Readily Achievable:** Applicable to the RAC Building and ILU Buildings only. The external walls of tof these buildings, including all components incorporated in them inclusive of the facade covering, framing, and insulation walls are required to be non-combustible or comply with the concessions under Clause C1.9 of the BCA. Note: Clause C1.9(e) permits the below listed materials to be used wherever non-combustible materials are required: + Plasterboard. + Perforated gypsum lath with a normal paper finish. + Fibrous-plaster sheet. + Fibre-reinforced cement sheeting. + Pre-finished metal sheeting having a combustible surface finish not exceeding 1 mm thickness and where the Spread-of-Flame Index of the product is not greater than 0. + Bonded laminated materials where— - each lamina, including any core, is non-combustible; and - each adhesive layer does not exceed 1 mm in thickness and the total thickness of the adhesive layers does not exceed 2 mm; and - the Spread-of-Flame Index and the Smoke-Developed Index of the bonded laminated material as a whole do not exceed 0 and 3 respectively - Details of the external finishes are to be documented and evidence in the fomr of Test Report (where required) is to be provided with the Construction Certificate documentation.

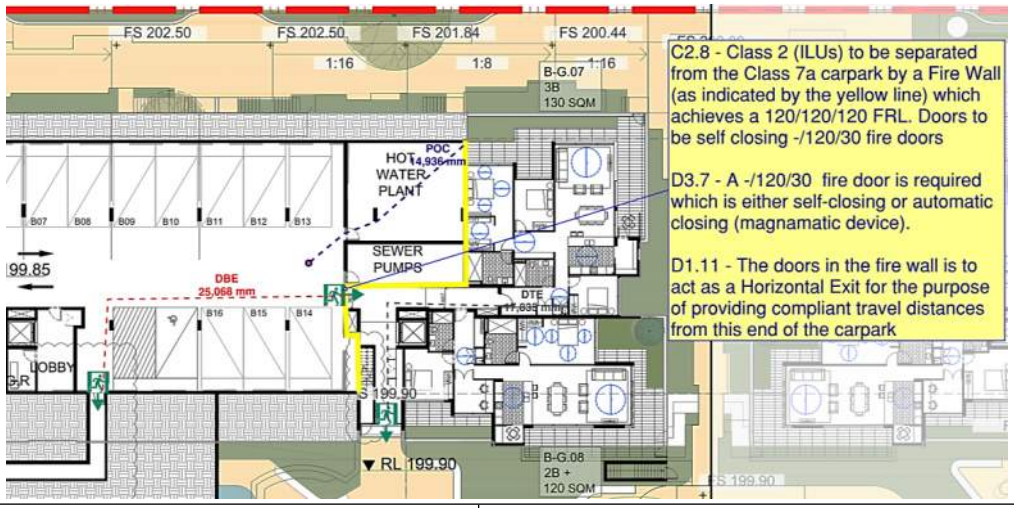
Clause	Reference	Comment
Part C2	***Fire Compartmentation & Separation***	
C2.5 9c buildings	A Class 9c building is required to be divided into areas of not more than 500m² by smoke-proof walls and comply with the provisions of sub-clause (b). Ancillary use areas, containing equipment or materials that are a high potential fire hazard, must be separated for the sole-occupancy units by smoke-proof walls. Note: Every smoke compartment will generally necessitate a mimic panel or otherwise proposed ceiling mounted annunciator panels which are capable of being used as mimic panels (i.e. alpha numeric display) in accordance with BCA specification E2.2a.	**Compliance Readily Achievable**: Applicable to the RAC Building only. The Class 9c part of the RAC Building must address the smoke compartment sizes as indicated in Clause C2.5 with respect smoke compartmentation & separation. The Smoke compartments sizes are to be noted in the Construction Certificate documentation and architectural drawings confirming that they do not exceed 500m². The smoke walls and smoke doors will be required to be constructed in accordance with BCA Specifications C2.5 & C3.4 respectively. The required smoke walls (if lightweight material) are to be lined with non-combustible lining not less than 13mm standard grade plasterboard. Note that the walls are to: + not incorporate glass except safety glass in accordance with AS1288; and + be fitted with self-closing smoke doors with smoke seals; and + have all service penetrations protected at the junction of the smoke-proof wall to stop the passage of smoke; and + Incorporate smoke dampers where air-handling ducts penetrate the wall – unless the duct forms part of a smoke hazard management system. Smoke doors are required to swing in both directions where egress travel is required in both directions through the doorway is required. Should operational requirements dictate the swing of a fire or smoke door, we recommend that a Fire Engineer prepare a **Fire Engineered Performance Solution** justifying that the doors do not need swing in both directions. The bulkhead above all smoke doors (between the top of door and underside of an imperforate ceiling is to be not less than 400mm. All internal walls between and bounding SOUs and bounding a pubic corridor must: + If provided with cavity insulation, have only non-combustible insulation; + Extend to the underside of- o The floor next above; or o A ceiling lined with standard grade plasterboard not less than 13 mm thick or an equivalent non-combustible material; or o A non-combustible roof covering; an + Not incorporate any penetrations above door head height unless the penetrations are adequately stopped to prevent the free passage of smoke

Clause	Reference	Comment
C2.6	If in a building of Type A construction, any part of a window or other opening in an external wall is above another opening in the storey next below and its vertical projection falls no further than 450 mm outside the lower opening (measured horizontally), the openings must be separated by and horizontal or vertical spandrel with an FRL of 60/60/60, and for the purposes of C2.6, window or other opening means that part of the external wall of a building that does not have an FRL of 60/60/60 or greater.	**Compliance Readily Achievable**: Spandrel protection is required throughout the ILU Buildings. This can be achieved via either: + A vertical spandrel which achieves an FRL of 60/60/60 and has an overall height of at least 900mm or more, extending at least 600mm above the upper surface of the intervening floor, and; + A horizontal projection (balcony) which achieves an FRL of 60/60/60 having an outwards projection from the external face of the wall of 1100 mm or more, and an extension along the wall beyond the openings of at least 450 mm Additional details of the spandrels are to be provided for assessment at the Construction Certificate stage. Particular attention is required where balconies are relied upon to ensure that an extension along the wall beyond the openings of at least 450 mm is achieved.
	 	
C2.7 Separation by fire wall	Fire walls used to separate adjoining Fire Compartments must in accordance with the following: + Constructed to achieve the higher FRL of the two fire compartments as prescribed in Specification C1.1 and extend to the underside of a floor with the same FRL, or to the underside of a non-combustible roof covering. + Any openings in a fire wall must not reduce the, except where permitted by the Deemed-to-Satisfy Provisions of Part C3 (i.e. fire doors; protection of services). + Building elements, other than roof battens with dimensions of 75 mm x 50 mm or less or sarking-type material, must not pass through or cross the fire wall unless the required fire resisting performance of the fire wall is maintained.	**Compliance Readily Achievable**: Refer to comments under Clause C2.8 below.

Clause	Reference	Comment
C2.8 Separation of classifications in the same storey	Different building classifications situated adjacent to each other in the same storey are required to adopt the higher FRL prescribed in Specification C1.1 or have the parts of the building separated by a fire wall.	**Further Information Required:** Applicable to the Class 9b and Class 2 parts located in Building A in the ILU Buildings In this instance, it is understood that building classifications situated adjacent to each other in the same storey will be separated by a fire wall which achieves the higher FRL of the Classifications as prescribed in Specification C1.1, this will include the Class 2 (ILU) parts where they are required to be separated from the Class 9b parts by a Fire Wall (FRL of 120/120/120). Fire compartment plans are required to be provided at the Construction Certificate stage which detail the required FRLs.
		
C2.9 Separation of classifications in different storeys	This clause specifies the required separation between parts of a building which are of a different classification, situated one above another, to minimise the risk of a fire in one classification causing the failure of building elements in another classification in a different storey.	**Further Information Required:** The floors between different classifications need to be fire rated in accordance with Specification C1.1. In this instance floors above the Class 7a and 9b parts are required to achieve an FRL of not less than 120/120/120), whilst floors above the Class 2 parts will require an FRL of not less than 90/90/90.
C2.10 Separation of lift shafts	This clause applies to all classes of buildings and specifies the protection requirements for openings for lift shafts and lift landing doors. The requirements are set out in sub-clauses (a), (b) (c) & (d) which relate to openings in Type A, B and C construction. Also note the Deemed to Satisfy Provisions of Part C3.	**Compliance Readily Achievable**: Noting that the proposed lifts are located in mix of Class 2, 7a & 9c parts throughout the development, the lift shafts are required to be separated from the remainder of the building by construction achieving an FRL of 120/120/120

Clause	Reference	Comment
C2.12 Separation of equipment	Equipment as listed below must be separated from the remainder of the building with construction that achieves an FRL of 120/120/120 and doorways being self-closing -/120/30 fire doors: + Lift motors and lift control panels; or + Emergency generators used to sustain emergency equipment operating in the emergency mode; or + Central smoke control plant; or + Boilers; or + A battery or batteries installed in the building that have a voltage exceeding 24 volts and a capacity exceeding 10 ampere hours. Separation of on-site fire pumps must comply with the requirements of AS 2419.1.	**Compliance Readily Achievable:** Fire compartment plans are required to be provided at the Construction Certificate stage which details the required FRLs. Note: Particular attention is to be paid to any batteries powering UPS for servers installed in the comms room within the buildings, noting that where they have a voltage exceeding 24 volts and a capacity exceeding 10 ampere hours, they will need to be separated from the remainder of the building with construction that achieves an FRL of 120/120/120.
C2.13 Electricity supply system	To ensure certain types of electrical equipment to operate during an emergency the requirements of sub-clauses (a), (b) (c), (d) & (e) must be complied with relating to sub-stations, sub-mains and main switchboards.	**Compliance Readily Achievable:** Fire compartment plans are required to be provided at the Construction Certificate stage which detail the required FRLs i.e. 120/120/120 to the walls and floors of all Main Switch Rooms
C2.14 Public corridors in class 2 buildings	A public corridor, if more than 40m in length, must be divided at internals of not more than 40m with smoke proof walks complying with Clause 2 of Specification C2.5	**Compliance Readily Achievable:** Applicable to the ILU Buildings only. Architectural documentation indicates that all public corridors within the class 2 portions of the development are within the 40m and therefore smoke separation is not required.
Part C3	***Protection of Openings***	
C3.2 Protection of openings in external walls	Openings in an external wall that is required to have an FRL must – (a) If the distance between the opening and the fire-source feature to which it is exposed is less than – (i) 3 m from a side or rear boundary of the allotment; or (ii) 6 m from the far boundary of a road, river, lake or the like adjoining the allotment, if not located in a storey at or near ground level; or (iii) 6 m from another building on the allotment that is not a Class 10, be protected in accordance with C3.4 and if wall-wetting sprinklers are used, they are located externally; and (b) If required to be protected under (a), not occupy more than 1/3 of the area of the external wall of the storey in which it is located unless they are in a Class 9b building used as an open spectator stand.	**Compliance Readily Achievable:** The architectural plans indicate that no building is within 3m of the allotment boundary or 6m of another building on the same allotment.
C3.3 Separation of external walls and associated openings in different fire compartment	The distance between parts of external walls and any openings within them in different fire compartments separated by a fire wall must be not less than that set out in Table C3.3 unless- + Those parts of each wall have an FRL not less than 60/60/60; and + Any openings protected in accordance with C3.4.	**Further Information Required:** Compartment plans are to detail separation between fire compartments which are exposed to each other as per Figure C3.3 below. Where the Class 9b and Class 2 are separated by a fire wall at the ground floor level of the ILU Buildings (specifically Building A), the external walls of the Class 9b parts which are exposed to the external walls or openings of the Class 2 parts are required to achieve an FRL of 60/60/60 and any openings protected in accordance with Clause C3.4. Refer to Figure C3.3 below with respect to the extent of the Class 9b external walls to which this will apply

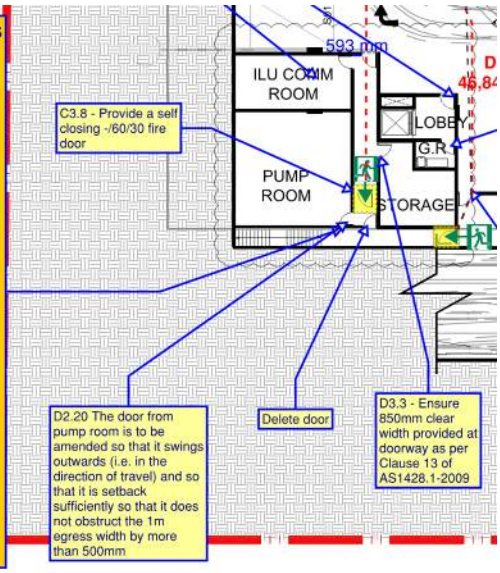
Clause	Reference	Comment
		
C3.4 Acceptable methods of protection	Where protection is required, doorways, windows and other openings must be protected as follows: + Doorways – (a) Internal or external wall-wetting sprinklers as appropriate used with doors that are self-closing or automatic closing; or (b) -/60/30 fire doors that are self-closing or automatic closing. + Windows – (a) Internal or external wall-wetting sprinklers as appropriate used with windows that are automatic closing or permanently fixed in the closed position; or (b) -/60/- automatic closing fire shutters. + Other openings – (a) Excluding voids – internal or external wall-wetting sprinklers, as appropriate; or (b) Construction having FRL not less than -/60/-.	**Compliance Readily Achievable**: Applicable to any openings in the buildings which are required to be protected under Clause C3.3 (above) and D1.7 (below) Details of the method of protection where applicable are to be provided at the Construction Certificate stage.
C3.5 Doorways in Fire Walls	Openings in fire walls, that are not part of a horizontal exit, must be protected in accordance with one of the methods set out in this clause.	Any new doors to be provided in fire walls must be fire rated to achieve the same rating as the fire wall itself, with the doors to be self-closing or auto closing on the activation of smoke detectors within 1.5-metres of either side of the doors, and also activation of any sprinkler or smoke detection system within the building.
C3.7 Protection of Doorways in Horizontal Exits	Requires that a horizontal exit must be protected by a single fire door which has an FRL as required by Specification C1.1 for the wall and specifies that the doors must be self-closing or automatic-closing and gives details of the deemed-to-satisfy methods of activation.	The door in the fire wall between the ground floor of Building B and the adjoining carpark is a required Horizontal Exit for the purpose of ensuring travel distance from the Hot Water Plan Room and ewer Pump Room comply. Accordingly, a -/120/30 fire door is required which is either self-closing or automatic closing (magnamatic device) on the activation of smoke detectors within 1.5-metres of either side of the doors, and also activation of any sprinkler or smoke detection system within the building.

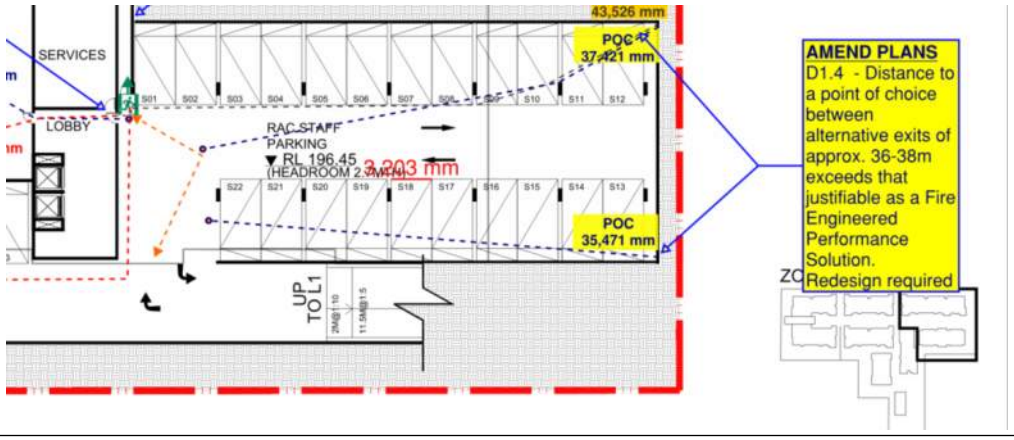
Clause	Reference	Comment
		
C3.8 Openings in fire isolated exits	Specifies that the doorways that open into fire-isolated exits must be protected by -/60/30 fire doors that are self-closing or automatic. This clause also details the deemed-to-satisfy methods of activation. This does not apply to doors opening to a road or open space. A window in the external walls of fire-isolated exits must be protected in accordance with C3.4 if it is within 6m of and exposed to a window or other opening in a wall of the same building other than in the same fire-isolated enclosure.	**Compliance Readily Achievable**: Applicable to the RAC Building. Details to be included into the design.
C3.9 Service penetrations in fire isolated exits	Fire isolated exits must not be penetrated by any services other than electrical wiring as permitted by D2.7, ducting associated with a pressurisation system or water supply pipes for fire services.	**Compliance Readily Achievable**: Applicable to the RAC Building. Details to be included into the design.
C3.10 Openings in fire isolated lift shafts	If lift shafts are required to be fire-isolated an entrance doorway must be protected by -/60- fire doors and the lift indicator panels must backed by construction having an FRL of not less than -/60/60 if it exceeds 35000mm²	**Compliance Readily Achievable**: Applicable to the RAC Building. Details to be included into the design.
C3.11 Bounding construction: Class 2, 3 and 4 parts	Protection is required to the bounding walls of sole-occupancy units or public corridors in Class 2 & 3 buildings and Class 4 portions of buildings of Types A, B & C Construction. Namely: + Doorways must be protected if providing access from an SOU to a: – Public corridor; – A room not within an SOU; or – The landing of an internal non-fire isolated stairway that serves a required exit; or – Another SOU + A doorway must be protected by a self-closing -/60/30 fire door if it provides access from a room not within an SOU to a public corridor or the like; or to the landing on a non-fire isolated stairway that serves as a required exit.	**Compliance Readily Achievable**: Applicable to the ILU Buildings. Fire compartment plans are required to be provided at the Construction Certificate stage which detail the required FRLs.
C3.12 Openings in floors and ceilings for services	This clause applies to the floors and ceilings in buildings of Types A, B & C Construction and sets out the methods required to limit the spread of fire through openings in these building elements, required to resist the spread of fire.	**Compliance Readily Achievable**: Details to be included into the design.
C3.13 Openings in shafts	This clause specifies that in buildings of Type A Construction, openings in shafts must be protected (generally with 1 hour fire rated shafts and doors).	**Compliance Readily Achievable**: Applicable to the RAC Building and ILU Buildings. Details to be included into the design.

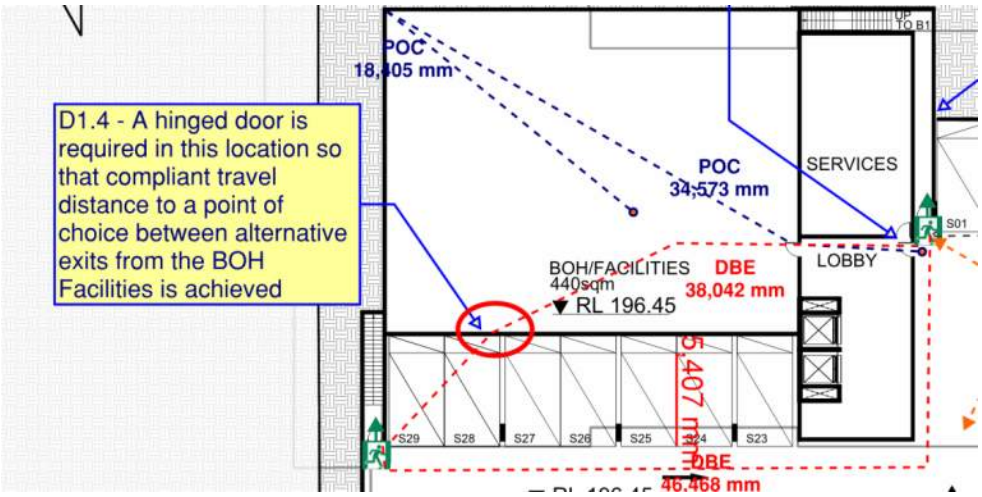
Clause	Reference	Comment
C3.15 Openings for service installations	The clause details the requirements for protection of service openings in building elements that have an FRL, to prevent the spread of fire. C3.15 applies only to an element required to have an FRL with respect to integrity or insulation. Specification C3.15 prescribes materials and methods of installation for services that penetrate walls, floors and ceilings required to have an FRL. Where the mechanical ventilation system penetrates floors or walls that require an FRL the installation is to comply with AS/NZS 1668.1.	**Compliance Readily Achievable**: Applicable to the RAC Building and ILU Buildings. Details to be included into the design.
C3.16 Construction joints	Construction joints, spaces and the like in and between building elements required to be fire-resisting with respect to integrity and insulation must be protected in a manner identical with a prototype tested in accordance with AS 1530.4 to achieve the required FRL.	**Compliance Readily Achievable**: Applicable to the RAC Building and ILU Buildings. Details to be included into the design.
C3.17 Columns protected with lightweight construction to achieve an FRL	A column protected by lightweight construction to achieve an FRL which passes through a building element that is required to have an FRL or a resistance to the incipient spread of fire, must be installed using a method and materials identical with a prototype assembly of the construction which has achieved the required FRL or resistance to the incipient spread of fire.	**Compliance Readily Achievable**: Applicable to the RAC Building and ILU Buildings. Details to be included into the design.
Spec.	***Specifications***	
Spec C1.1 Fire resistance construction	The new building works are required to comply with the requirements detailed under Table 3 of Specification C1.1 for Type A Construction.	**Further Information Required:** Compartment plans are to detail the FRLs that will be provided throughout based on the requirements of Table 3 of Specification C1.1 (refer to appendix 3). Refer to Clause C2.8, C2.9 and C3.3 regarding fire separation of the different building classifications.
Spec C2.5/C3.4 Smoke-Proof Walls in Health-Care and Aged Care Buildings	This specification sets out requirements for the construction of smoke-proof walls in Class 9c aged care buildings. Smoke-proof walls required to have an FRL (such as those specified under Clause C2.8) are to be in accordance with Specification A2.3. Note 1: Minimum 400mm deep smoke reservoirs are to be provided above each smoke door located in a smoke wall to prevent the passage of smoke. The smoke reservoir needs to extend for the full width of the corridor. Note 2: If plasterboard is used in the lining on the smoke walls, it will be a minimum of 13mm standard grade plasterboard. Note 3: Where the smoke walls bound a wet area room (i.e. ensuite), it will be necessary to provide appropriate lining material (or equivalent) such as listed in the BCA: + 12 mm cellulose cement flat sheeting complying with AS/NZS 2908.2 or ISO 8336; or + 12 mm fibrous plaster reinforced with 13 mm x 13 mm x 0.7 mm galvanised steel wire mesh located not more than 6 mm from the exposed face; or + Other material not less fire-protective than 13 mm fire-protective grade plasterboard. Note 4: Mechanical penetrations through smoke walls in the Class 9c are to incorporate smoke dampers. Any mechanical penetrations through fire/smoke walls are to include combined fire/smoke dampers. Note 5: Every smoke compartment in the Class 9c will necessitate a mimic panel or annunciator panel in accordance with BCA specification E2.2a. This includes each small area room that is effectively	**Further Information Required**: The class 9c part of the building must address the smoke compartment sizes as indicated in Clause C2.5 with respect smoke compartmentation & separation. The Smoke compartments are to be designed and detailed on the architectural drawings indicating that they do not exceed 500m². The smoke walls and smoke doors will be required to be constructed in accordance with BCA Specifications C2.5 & C3.4 respectively.

Clause	Reference	Comment
	smoke separated including serveries (>30m²), records, plant room, etc. Note 6: The non-loadbearing internal lightweight walls between and bounding sole-occupancy-units and bounding a public corridor (where not fire or smoke walls) in the Class 9c resident use areas are to be:- (A) be lined on each side with standard grade plasterboard not less than 13 mm thick or a material with at least an equivalent level of fire protection; and (B) provided with cavity insulation which is non-combustible (product details to be provided to BM+G for review); and (C) extend to the underside of— + the floor next above; or + a ceiling lined with standard grade plasterboard not less than 13mm thick or an equivalent non-combustible material; **or** + a non-combustible roof covering.	

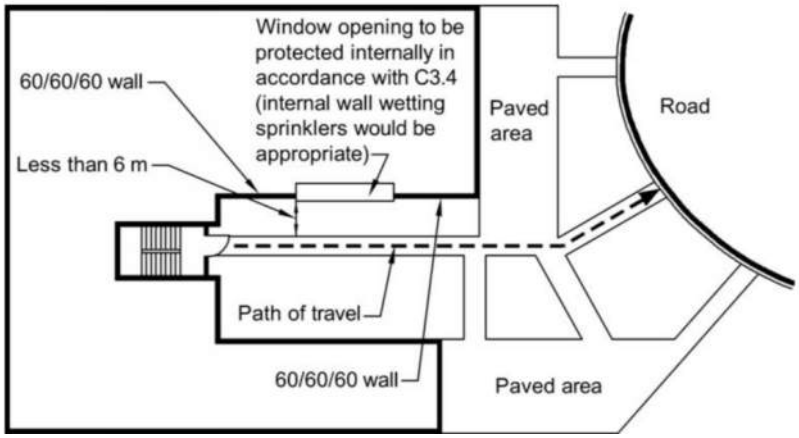
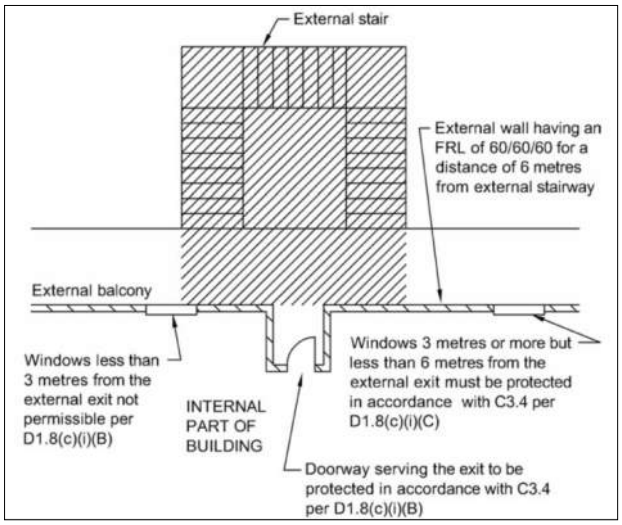
Clause	Reference	Comment
SECTION D	**ACCESS AND EGRESS**	
Part D1	***Provisions for Escape***	
D1.2 Number of exits required	All buildings must have at least one exit from each storey. Class 9 buildings must have at least 2 exits from each storey for the following; + Any storey which contains sleeping areas in a Class 9c area.	**Further Information Required**: Plan are to be updated to clear detail the exits throughout the development as follows: RAC Building: + The plans detail the minimum required two exits from all levels including the carpark. Notwithstanding, these exits will need to be amended or additional exits provided to ensure that compliant travel distances are achieved (refer to Clause D1.4 & D1.5 below). Additionally, details are required of the location of the point of discharge from the fire isolated exits at Ground Floor (refer to Clause D1.7) + The basement car parking is required to have exits nominated noting that 2 exits are required for each storey. Wellness Centre: + The proposed two (2) exits comply. ILU Buildings: + Class 2 Parts: The proposed single exits serving the Class 2 portions of the above ground levels comply + Class 9b part: The proposed exits from the Class 9b part of the ILU Buildings (Building A) complies with the requirements of this clause. + Basement Levels: The proposed number of exits from, noting that the egress from these levels involves a vertical rise within the building of more than 1.5m.

Clause	Reference	Comment
D1.3 When Fire isolated exits are required	Class 2– every stairway must be fire-isolated if it connects more than 3 consecutive storeys. Class 9c – All stairways must be fire-isolated. An extra storey of any classification can be included if the building has a sprinkler system throughout; or if the stair is not providing access from or egress to the additional storey, and is separated by construction achieving an FRL of 60/60/60, and is smoke proof.	**Further Information Required**: RAC Building: + Upper Levels: The current design indicates that the two exit stairs are contained in fire-isolated shafts which comply with the requirements of this clause. Noting that these stairs connect 3 consecutive storeys, the stairs will require pressurisation (refer to Clause E2.2a) + Basement levels: Fire-isolated stairs are not required for the basement levels as the stairs do not connect more than 2 storeys. Wellness Centre: + Not applicable ILU Buildings: + Upper levels: Fire-isolated stairs are not required for the upper levels as they do not connect more than 3 storeys. Notwithstanding, smoke separation may be required as part of the Fire Engineered Performance Solution to justify the extended travel distances of up to 11.5m (refer to Clause D1.4 below) + Basement levels: Fire-isolated stairs are not required for the basement levels provided none of the stairs connect more than 2 storeys. Notwithstanding, the stair in the basement below Buildings A & D which the provides access to/egress from the Hydrant Pump room is to be fire rated as required by AS 2419.1-2005 (refer to Clause E1.3 and E1.5 below)
	The below departures will need to be addressed as follows: **AMEND PLANS** D1.3 - The stair is to be contained within a fire-isolated shaft and door opening in to the stair are to be self closing -/60/30 fire doors E1.3 - The configuration of the doors to the stair need to be amended so that the door from the Hydrant Pump room opens directly in to the fire isolated stairway E1.5 - Assuming the pump room will contain the sprinkler alarm valves, a **Fire Engineered Performance Solution** will be required to justify the door opening in to a fire isolated stairway in lieu of directly to open space. E1.5 - The pump room is to consist of construction which achieves a 120/120/120 FRL unless sprinkler coverage is extended in to the room	
D1.4 Exit travel distances	For Class 2 buildings: + Maximum 6m to an exit or to a point of choice between alternative exits from sole-occupancy units + 20m from a single exit to open space or road when the storey is on the same level of egress from sole-occupancy units + Maximum 20m to an exit or to a point of choice between alternative exits from any other part of the floor not in a sole-occupancy unit. For Class 9c buildings: + Maximum 20m to an exit or to a point of choice between alternative exits.	**Does not comply:** The following is a preliminary summary of the key compliance issues: ILU Buildings: + Class 2 parts: Distance to an exit (non-fire isolated stair) at the upper levels exceeds the maximum DtS permitted distance of 6m (approximately 11.5m). This will need to be addressed as a **Fire Engineered Performance Solution** which in turn may necessitate smoke separation of the stairs. + Class 9b part (Ground Floor): Distance to a point of choice between alternative exits at the from the sanitary facilities located at the ground floor level of the Class 9b part in Building A and D of the ILU

Clause	Reference	Comment
	+ Maximum distance to one of those exits is 40m.	Buildings (adjacent to Quarry Road) exceeds the maximum DtS permitted distance of 20m (approximately 24/25m). This will need to be addressed as a **Fire Engineered Performance Solution** which in turn may necessitate smoke separation of the stairs. + Class 7a Part (Basement Levels): a **Fire Engineered Performance Solution** will be required to justify travel distances as follows: o Up to 27m to a point of choice between alternative exits (in lieu of the DtS maximum of 20m) o Up to 57m to an exit (in lieu of the DtS maximum of 40m) RAC Building: + Class 9c Parts (Upper Levels): The current design requires further consideration, noting that the location of exits results in travel distances to a point of choice between alternative exits which exceeds the maximum DtS permitted 20m to an exit (in the order of up to 36m). A fire engineered performance solution can reasonably justify up to a maximum of 22m and as such, additional or relocated exits are required. + Class 7a Part (Basement Levels): The current design requires further consideration, noting that the travel distance to a point of choice between alternative exits is up to approximately 38m from the north east end of the Basement Level 2 which exceeds both the DtS maximum of 20m and the maximum justifiable distance under a **Fire Engineered Performance Solution** of up to 30m. + An additional hinged door is to be provided between the BOH facilities and carspace S27 (approximately) so that compliant travel distance to a point of choice between alternative exits from the BOH Facilities is achieved. + With the exception of the above, travel distances within basement levels of the RAC Building basements generally comply with the maximum DtS permitted distances of 20m to a point of choice between alternative exits and 40m and to one of those exits Wellness Centre: + Travel distances to a point of choice between alternative exits and to alternative exits comply with the maximum DtS permitted distances of 20m to a point of choice between alternative exits and 40m and to one of those exits
		

Clause	Reference	Comment
	Basement 2 – RAC Building  *Basement 2 – RAC Building*  *Level 1 – RAC Building*	
D1.5 Distances between alternative exits	Exits required as alternative exits must be – (a) distributed as uniformly as practicable within or around the storey served and in positions where unobstructed access to at least 2 exits is readily available from all points on the floor including lift lobby areas; and (i) not less than 9m apart; and (ii) not more than + 45m apart in class 2 buildings; + 60m apart in all other cases (c) Located so that the alternative paths of travel do not converge such that they become less than 6m apart.	**Compliance Readily Achievable:** Notwithstanding that exits are yet to be designated within the basement carpark and RACF areas majority of the development generally complies with the maximum permitted distances.
D1.6 Dimensions of exits	This clause specifies the minimum dimensions such as height and width of paths of travel from Class 2 to 9 buildings. It also specifies the minimum dimensions of doorways from the various compartments and the width of exit doors from buildings depending on the uses and functions carried out within them The unobstructed height throughout a required exit must not be less than 2m and not less than 1980mm for a doorway.	**Further Information Required:** Dimensions of corridors and doorways are to be further detailed as follows: For the Class 9c part: The unobstructed width in a public corridor of a Class 9c aged care building must be not less than: + 1500mm generally and 1800m outside doorways providing access into sole-occupancy units or communal bathroom. The doorways in the building must have a minimum unobstructed clear opening as follows: + 1070mm where it opens from a public corridor to a

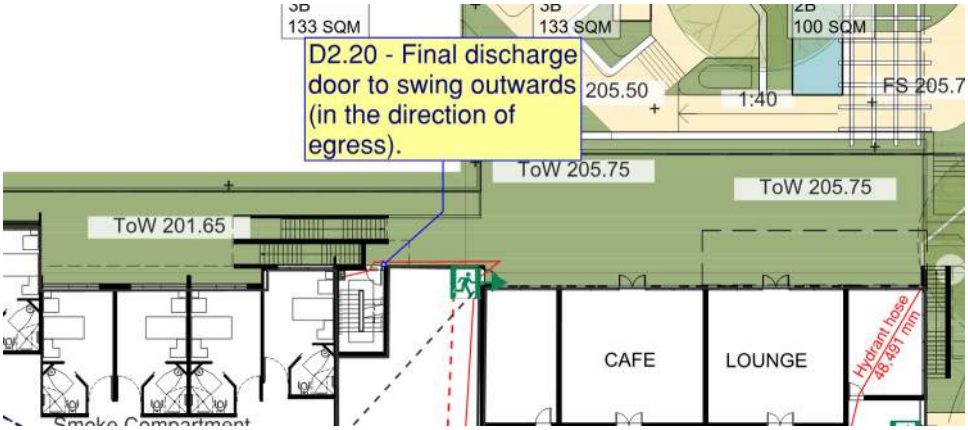
Clause	Reference	Comment
		resident room; and + 870mm in other resident use areas such as doors in corridors, quiet rooms, hairdresser (salon) rooms, assisted bathrooms, resident ensuites, balconies and fire isolated exits and the like, and + 850 mm in non-resident use areas such as offices, storage areas, staff/nurse stations, kitchen, medication rooms and utility areas. For the Class 2 part: The unobstructed width of paths of travel must be not less than 1m however, additional circulation space will be required in various locations to address compliance with AS1428.1-2009 The doorways in the building must have a minimum unobstructed opening as follows: + 850mm for accessible units and common doors + 750mm for other sole-occupancy unit doorways. For the Class 7a, and 9b parts: + The minimum width of the corridors is to be 1m in width; however, additional circulation space will be required in various locations to address compliance with AS1428.1-2009. + The doorways in the building must have a minimum unobstructed opening of 850mm where required to be accessible
D1.7 Travel via fire isolated exits	A doorway from a room must not open directly into a stairway, passageway or ramp that is required to be fire-isolated unless it is from a public corridor/lobby, sole-occupancy unit occupying all of a storey or a sanitary compartment/airlock. Each fire isolated stairway or ramp must provide independent egress from each storey served and must discharge to – + A road or open space; or + To a point in a space within the building that is only used for pedestrian movement or car parking that is open a minimum of 2/3 of its perimeter and from which a path of travel under 20m is available to a road or open space; or + A covered area that adjoins a road or open space, is open for a minimum of 1/3 of its perimeter, has an unobstructed height of at least 3m throughout and provides a path of travel the point of discharge to a road or open space within 6m. Where a path of travel from the point of discharge of a fire isolated exit necessitates passing within 6m of any part of an external wall of the same building, measured horizontally at right angles to the path of travel, that part of the wall must have – + an FRL of not less than 60/60/60; and + Any openings protected internally in accordance with BCA Clause C3.4, + For a distance of 3m above or below, as appropriate, the level of the path of travel, or for the height of the wall, whichever is the lesser.	**Further Information Required:** Paths of travel are to be provided from the point of discharge from the Fire Isolated Stairs serving the RAC Building that does not result in occupants passing within 6m of the building (when measured horizontally from the path of travel). The above-mentioned paths are to be detailed on the plans submitted with the Construction Certificate application. Refer to comments under Clause D1.10 below regarding additional requirements.

Clause	Reference	Comment
		
D1.8 External stairways or ramps in lieu of fire isolated exits.	D1.8(a) An external stairway or ramp may serve as a required exit in lieu of a fire-isolated exit serving a storey below an effective height of 25m provided that it is constructed in accordance with the requirements of sub-clauses (a) to (d). The provisions also set out the requirements of protection for external required exits. In this regard the external stairs are required to comply with the following: + Stairs are to be non-combustible throughout. + External walls within 3m of the external stairs are to contain no openings (other than fire doors providing access to the stairs) and are to be constructed with a minimum FRL of 60/60/60. + External walls within 3m to 6m from the external stairs are required to be constructed with an FRL of 60/60/60 with any openings protected internally in accordance with C3.4.	**Further Information Required:** External stairs are a viable option worthy of further consideration for the purposes of replacing otherwise required fire isolated stairs within the RACF. *Note:* An external stair placed on the south western side of the building will trigger exposer issues by virtue of being within 6m of another building on the same allotment.
	 *Protection of the external stair using the external wall in accordance with D1.8(c)(i)*	

Clause	Reference	Comment
D1.10 Discharge from exits	Upon egress occupants must have suitable paths of travel including compliant stairways and ramps (where required) between the building and the Roadway. Graded surfaces such as the vehicular ramp must not be steeper than 1:8 and may require handrails. Bollards are required to exit doors where they could be potentially blocked by vehicles. This will also include the discharge points of the stair to the car parking areas to ensure that a clear 1 metre wide path of travel is provided to the public roadway. Bollards may also be required in front of the exits in the basement.	**Further Information Required:** Paths of travel to the road from exits are to be detailed on the plans submitted with the Construction Certificate. Paths are to be a minimum 1m wide and where stairs are required, the minimum 1m width is to be measured between the handrails either side of the stair.
D1.11	Horizontal Exits may be counted as required exits if the path of travel from a fire compartment leads by one or more Horizontal Exits directly into another fire compartment which has at least one required exit which is not a Horizontal exit. In addition, Horizontal Exits must have a clear area on the side of the fire wall to which occupants are evacuating, to accommodate the total number of persons serviced by the Horizontal Exit of not less than 2.5m2 per patient.	**Compliance Readily Achievable**: A horizontal exit is required between the ground floor of Building B and the adjoining carpark in the ILU Buildings to achieve compliant travel distance to a point of choice between alternative exits. Accordingly, the wall forming the horizontal exit is to be of construction which achieves a 120/120/120 FRL and a -/120/30 fire door is required which is either self-closing or automatic closing (magnamatic device) on the activation of smoke detectors within 1.5-metres of either side of the doors, and also activation of any sprinkler or smoke detection system within the building.
D1.16 Plant rooms & lift motor rooms concession	A ladder may be used in lieu of a stairway to provide egress from a plant room with a floor area of not more than 100m² or all but one point of egress from a plant room or a lift machine room with a floor area not more than 200m². Sub-clause (b) sets out the parameters for the ladders permitted to be used in this circumstance.	**Compliance Readily Achievable**: Details to be included into the design.
D1.17 Access to lifts pits	This clause provides the requirements for access to lift pits not more than 3m deep and the requirements of construction of access for lift pits that are more than 3m deep. The requirements for signage to lift pits are also set out.	**Compliance Readily Achievable**: Details to be included into the design.
PART D2	***Construction of Exits***	
D2.2 Fire isolated stairways & ramps	A stairway or ramp, including landings that are required to be within a fire-resisting shaft must be constructed of non-combustible materials to protect the structural integrity of the shaft.	**Compliance Readily Achievable**: Details to be included into the design.
D2.3 Non-fire-isolated stairways and ramps	In a building with a rise in storeys of more than 2, required non-fire-isolated stairways and ramps must be either constructed in accordance with D2.2 or – + Reinforced or prestressed concrete; or + Steel at least 6mm thick at all points; or + Timber that has a finished thickness of at least 44mm, has an average density of at least 800 kg/m³ at a moisture content of 12% and has not been joined by means of glue unless it has been laminated and glued with resorcinol/phenol formaldehyde.	**Compliance Readily Achievable**: Details to be included into the design.
D2.7 Installations in exits and paths of travel - Review	If installed in a path of travel to an exit, electrical distribution boards, communication cupboards and the like containing motors, etc. are to be enclosed with non-combustible construction, and doors are to be provided with smoke seals to the perimeter.	**Compliance Readily Achievable**: Details to be included into the design.

<table>
<tr><th>Clause</th><th>Reference</th><th>Comment</th></tr>
<tr><td>D2.13
Goings and risers</td><td>The stairs must comply with the tread, riser and going dimensions of this clause and the nosing of the stairs must be provided with a non-slip treads and meet the provisions of AS1428.1-2009.
The following will apply in relation to the construction of all stairways:
+ Stairway must have not more than 18 and not less than 2 risers in each flight.
+ Goings and risers within the stair flights must be constant throughout.
+ Risers must be solid construction with no gaps and treads must have non slip finishes and stair nosings.
+ Goings and risers are to be in accordance with BCA Table D2.13</td><td>Compliance Readily Achievable:
Details to be included into the design.</td></tr>
<tr><td>D2.14
Landings</td><td>In a stairway –
+ Landings must be a minimum of 750mm long, and where it involves a change of direction the length is measured 500mm from the inside edge of the landing
+ Have a slip resistance of the surface of the nosing strip in accordance with Table D2.14 and tested in accordance with AS 4586.
<table>
<tr><th rowspan="2">Application</th><th colspan="2">Surface Conditions</th></tr>
<tr><th>Dry</th><th>Wet</th></tr>
<tr><td>Ramps steeper than 1:14</td><td>P4/R11</td><td>P5/R12</td></tr>
<tr><td>Ramp steeper than 1:20 but not steeper than 1:14</td><td>P3/R10</td><td>P4/R11</td></tr>
<tr><td>Tread or landing surface</td><td>P3/R10</td><td>P4/R11</td></tr>
<tr><td>Nosing or landing strip</td><td>P3</td><td>P4</td></tr>
</table></td><td>Compliance Readily Achievable:
Details to be included into the design.</td></tr>
<tr><td>D2.15 Thresholds</td><td>The threshold of a doorway must not incorporate a step or ramp at any point closer to the doorway than the width of the door leaf unless –
+ In a part of the building required to be accessible, be provided with a threshold or step ramp to comply with AS 1428.1-2009.
+ In parts not required to be accessible (i.e. discharge of fire-isolated stairway), the door sill is not more than 190mm above the outside FFL.
+ In a Class 9c, a ramp is provided with a maximum gradient of 1.8 for a maximum height of 25mm over the threshold.
+ In other cases, the doorway opens to a road or open space, external stair or balcony and the door still is a maximum of 190mm above the finished surface.</td><td>Compliance Readily Achievable:
Details to be included into the design.</td></tr>
</table>

Clause	Reference	Comment
D2.16 Balustrades	This clause details where balustrades are required to be provided and sets out in specific detail the construction requirements. Typically the following will apply: + Balustrades are required where the fall to the level below is more than 1m in height. The minimum height of a balustrade is 1m above the floor of the landing, walkway or the like; and 865mm above the floor of a stairway or a ramp. + For a fall of more than 4m to the surface level below, a window sill must be a minimum of 865mm in height above the height of the floor surface. + Where the floor is more than 4m above the surface beneath the balustrade any horizontal or near horizontal members between 150mm and 760mm above the floor must not facilitate climbing. + Balustrades must be constructed so as to not permit a sphere of 125mm diameter to pass through. The exception to this is within fire isolated exits within the building, or within a Class 7 or 8 building, where the rails can be positioned a maximum of 460mm apart, so long as a bottom rail is located so a sphere of 150mm cannot pass through the opening between the nosing of the stair treads and the rail or between the floor of the landing, balcony or the like.	**Compliance Readily Achievable**: Details to be included into the design where applicable.
D2.17 Handrails	Class 9c building – + Must be provided along both sides of every passageway used by residents and must be fixed a minimum of 50mm clear of the wall and continuous for their full length. + Along both sides of every stairway or ramp Generally - + Be located along at least one side; and + Be located along the full length, except where it is associated with a barrier; and + Have the top surface of the handrail a minimum of 865mm above the stairs or floor; and + Have no obstruction on or above that may break a handhold, except for newel posts, stanchions or the like. These requirements do not apply to handrails referred to in D2.18, a stairway or ramp providing a change in elevation of less than 1m, a land or a winder where a newel post is installed to provide a handhold.	**Further Information Required:** Handrails are to be documented on the Construction Certificate architectural drawings as follows: RAC Building Class 9c part: Along both sides of every passageway or corridor in resident use areas and: + Fixed not less than 50mm clear of the wall; + Where practicable, continuous for their full length. Fire-Isolated Stairs: A handrail is required along one side of all fire-isolated stairs which is a minimum of 865mm above the stair nosing and 1m above landings (which are greater than 500mm in length). The handrail must also be continuous between flights. Non Fire-Isolated Stairs: Non fire-isolated stairs and ramps including those incorporated in the path of travel from exits to the road must be designed to include: + Handrails to be both sides fixed at a height of not less than 865 mm; + Extensions to the handrails at the top of the stair (minimum of 300m) and bottom of the stair (minimum of 300mm + 1 tread width) with either a 180° turn-down or be turned 90° back to the wall as per AS1428.1-2009.
D2.18 Fixed platforms, walkways stairways and ladders	A fixed platform, walkway, stairway, ladder, any going and riser, any balustrade or other barrier attached thereto may comply with AS1657 if it only serves a machinery or plant room or non-habitable part of a sole-occupancy unit in a Class 2 building or Class 4 part	**Compliance Readily Achievable**: Details to be included into the design.

Clause	Reference	Comment
D2.19 Doorways and doors	This clause applies to all doorways and refers to the types of doors that cannot be used in buildings of prescribed uses, the use of power operated doors and the force required to operate sliding doors. If the door is also power operated, it must be opened manually under a force of not more than 110N if there is a malfunction or failure to the power source; or upon the activation of a fire or smoke alarm anywhere in the fire compartment served by the door.	**Compliance Readily Achievable**: Details to be included into the design.
D2.20 Swinging doors	A swinging door in a required exit or forming part of a required exit must swing in the direction of egress and must not otherwise impede egress. In addition, the door must not encroach at any part of its swing by more than 500mm on the required width of the exit (with the exception of airlocks and sanitary compartments, and with the exception of buildings or building parts that are less than 200m^2).	**Further Information Required**: Doors opening in to fire isolated exits are to be design so they do not encroach more than 500mm on the required exit width i.e. the 1m width between the stair and door. The final discharge door from the eastern fire isolated stair in the RAC Building (shown below) is required to swing outwards (in the direction of egress).
	 *RAC Building*	
D2.21 Operation of latch	A door in a required exit or forming part of a required exit and in a path of travel to a required exit must be readily openable without a key from the side that faces a person seeking egress, by a single downward action or pushing action on a single device which is located between 900mm & 1100mm from the floor. This clause prohibits the use of devices such as deadlocks and knobs (rather, lever latches are required). D2.21 also sets out exceptions in relation to buildings where special security arrangements are required in relation to the uses carried out. *Note:* Where fitted with a fail-safe device which automatically unlocks the door upon the activation of a sprinkler system or detection system, the above need not apply.	**Compliance Readily Achievable**: Doors throughout the RAC Building, Wellness Centre and ILU Buildings are to be: + Fitted with a handle located between 900mm-1100mm above FGL which can be operated using a single handed downward action; and + Operable without a key or fitted with a fail-safe device so that they unlock in fire mode from the balcony side i.e. the side facing occupants egressing from the building. + Where the door is serving an area required to be accessible by BCA Part D3, the door hardware is to: - be such that the hand of a person who cannot grip will not slip from the handle during the operation of the latch; and - have a clearance between the handle and the back plate or door face at the centre grip section of the handle of not less than 35 mm and not more than 45 mm; or - a single hand pushing action on a single device which is located between 900mm and 1200mm above FGL. Note: Hinged doors are to be provided in the proposed operable walls at the First Floor Level of the RACF Building.

Clause	Reference	Comment
D2.22 Re-entry from fire-isolated exits	Doors of a fire-isolated exit must not be locked from the inside in a Class 9a health-care building, a Class 9c aged care building and in a fire-isolated exit serving a storey above 25m effective height, throughout the exit. This clause details the exceptions to the above requirements if the doors are fitted with an automatic failsafe device that automatically unlocks the door upon the activation of a fire alarm as follows: + On at least every fourth storey, the doors are not able to be locked and a sign is fixed on such doors stating that re-entry is available; or + An intercommunication system, or an audible or visual alarm system, operated from within the enclosure is provided near the doors and a sign is fixed adjacent to such doors explaining its purpose and method of operation.	**Compliance Readily Achievable**: Applies to all fire-isolated stairways in the RAC Building. Details to be included into the design for all fire-isolated stairways
D2.23 Signs on doors	This clause requires the use of signs to alert persons that the operation of smoke doors and fire doors and doors discharging from fire isolated exits, must not be impaired and must be installed where they can be readily seen.	**Compliance Readily Achievable**: Details to be included in the developing design.

a) A sign, to alert persons that the operation of certain doors must not be impaired, must be installed where it can readily be seen on, or adjacent to, a—

(i) A required fire door providing direct access to a fire-isolated exit; and

(ii) A required smoke door, on the side of the door that faces a person seeking egress and, if the door is fitted with a device for holding it in the open position, on either the wall adjacent to the doorway or both sides of the door; and

(iii) Fire door forming part of a *horizontal exit*; and

(iv) Smoke door that swings in both directions; and

(v) Door leading from a fire isolated *exit* to a road or *open space*, on each side of the door.

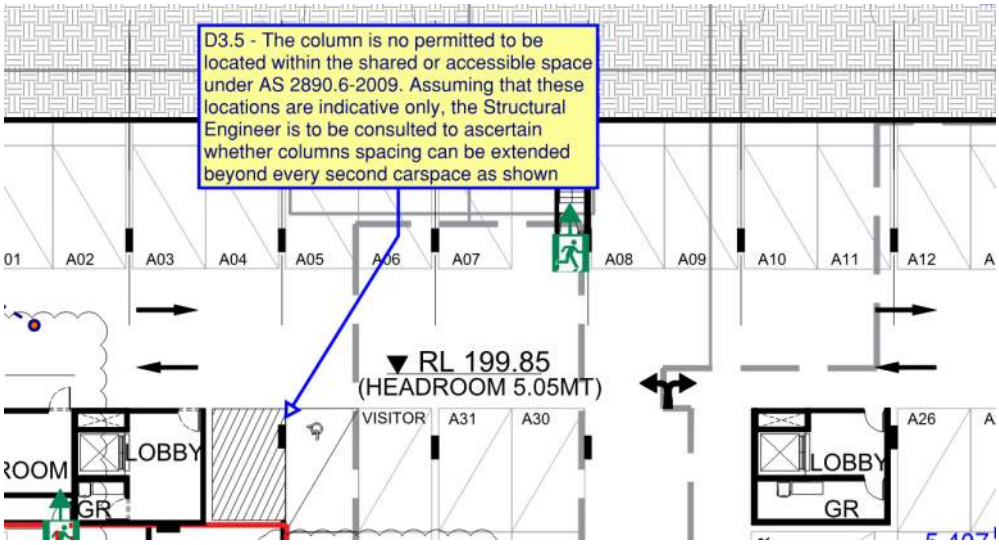
b) A sign referred to in (a) must be in capital letters not less than 20 mm high in a colour contrasting with the background and state—

Any new self-closing fire and/or smoke doors leading into the fire stair or forming part of a Horizontal Exit or smoke compartment are to be provided with signage as follows:

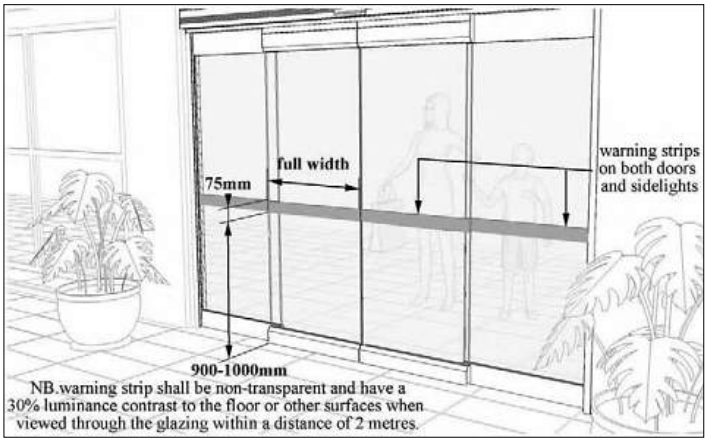
Any new automatic closing fire and/or smoke doors which are held on hold open devices that leads into the fire stair or forming part of a Horizontal Exit or smoke compartment are to be provided with signage as follows:

In addition to the above, the doors which provide access to the fire isolated exits and also the Horizontal Exits must have signage provided adjacent to the entry doorway which states the following (ref Clause 183 of EP&A Reg 2000):

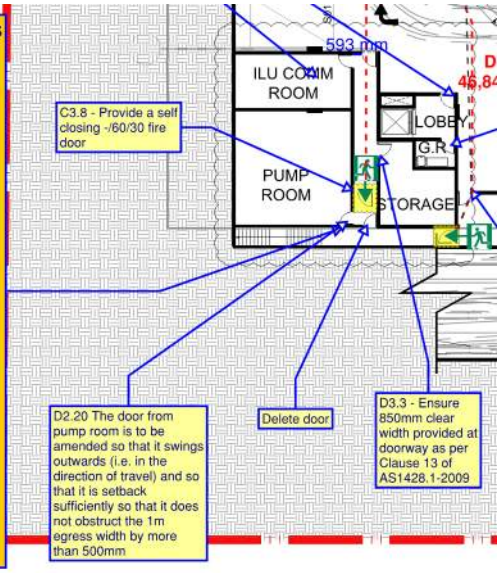
Clause	Reference	Comment
D2.24 Protection of openable windows	This clause relates to the protection of openable windows in a class 2 building, where the floor level is more than 2m above the surface level beneath. The intent of this clause is to limit the risk of a person (especially a young child) falling through an openable window, however it does not apply to such a window where the lowest level of its window opening is less than 1.7m above the floor. Details for protection include the following: + Openable portion of the window must have a device to restrict the window opening; or + Be fitted with a screen with secure fittings; + Not permit a sphere of 125mm to pass through; + Resist outward horizontal action of 250N; + Have a child resistant release mechanism if the screen or device is able to be removed, unlocked or overridden.	**Compliance Readily Achievable**: Windows to bedrooms within the Class 2 part of the building which have a sill height less than 1.7 m above FFL are to be provided with device capable of restricting the opening to less than 125mm. For other parts of the building where the floor is more than 4m above the surface level below and have a window sill height less than 865mm are not to have openings greater than 125mm nor contain horizontal or near horizontal elements between 150mm and 760mm above the floor that facilitate climbing. Details to be included in the developing design.
PART D3	***Access for People with Disabilities***	
D1 General building access requirements	The extent of access required depends on the classification of the building. Buildings and parts of buildings must be accessible as set out in Table D3.1 unless exempted by Clause D3.4.	**Compliance Readily Achievable**: Design statement and Access Report to be provided at Construction certificate stage.
D 3.2 Access to buildings	This part requires accessways to be provided to accessible buildings from the main points of pedestrian entry at the allotment boundary and any accessible car parking space or accessible associated buildings connected by a pedestrian link. Access must be provided to and within all areas normally used by occupants (as required by Clause D3.1) within this building from the main points of pedestrian entry at the allotment boundary; from another accessible building connected by a pedestrian link; and any accessible car parking space. Accessways are to be provided to accessible buildings from the main points of pedestrian entry at the allotment boundary and any accessible car parking space or accessible associated buildings connected by a pedestrian link. Access must be provided through the principal pedestrian entrance and through not less than 50% of all pedestrian entrances (including the principal pedestrian entry). In addition, as the building is greater than 500m2, the non-accessible entrance must not be greater than 50m from an accessible entrance.	**Compliance Readily Achievable**: Design statement and Access Report to be provided at Construction certificate stage. *Note:* 4 accessible sole occupancy units are required within the RACF
D3.3 Parts of buildings to be accessible	This part specifies the requirements for accessways within buildings which must be accessible. In accordance with Clause D3.3; the non-fire-isolated stairways must comply with Clause 11 of AS 1428.1-2009 and the passenger lift must comply with Clause E3.6. Clause D3.3(g) and (h) requires that the pile height or pile thickness shall not exceed 11mm and the carpet backing thickness shall not exceed 4mm. Moreover, the carpet pile height or pile thickness dimension shall not exceed 11mm, the carpet backing thickness dimension shall not exceed 4mm and their combined dimension shall not exceed 15mm.	**Compliance Readily Achievable**: Design statement and Access Report to be provided at Construction certificate stage.

Clause	Reference	Comment
D3.4 Concessions	This part provides exemptions to the Deemed-to-Satisfy provisions for access by people with a disability. This part provides details on buildings or parts of buildings not required to be accessible under the BCA where providing access would be inappropriate because of the nature of the area or the tasks undertaken.	**Compliance Readily Achievable**: Design statement and Access Report to be provided at Construction certificate stage.
D3.5 Accessible Carparking	Accessible carparking spaces need not be provided in a Class 7a building or carparking area where a parking service is provided and direct access to any of the carparking spaces is not available to the public. Additionally, accessible spaces need not be designated where there are 5 or less carparking spaces. Accessible carparking spaces must be provided in accordance with Table D3.5 of the BCA, in a Class 7a building required to be accessible and a carparking area on the same allotment as a building required to be accessible. Additionally, accessible spaces must comply with AS/NZS 2890.6.	**Compliance Readily Achievable**: Design statement and Access Report to be provided at Construction certificate stage. *Note:* a number of shared spaces adjoining the accessible spaces are obstructed by a column. *Note:* Bollards are required to be positioned in the shared spaces adjoining the accessible spaces. *Note:* the shared spaces are to achieve a width of 2.4m.
	 *Basement 1*	
D3.6 Signage	Braille and tactile signage must be provided to required accessible sanitary facilities, spaces with hearing augmentation, ambulant sanitary facilities, pedestrian entrances that are not accessible, **and** to each door required by Clause E4.5 to be provided with an exit sign. The latter is to state EXIT and state the level e.g. LEVEL 1	**Compliance Readily Achievable**: Design statement and Access Report to be provided at Construction certificate stage.

Clause	Reference	Comment
Signage Specification:- The signage is to be:- (a) Located between 1200-1600mm above FFL (b) Signs with single lines of characters are to have the line of the tactile characters between 1250mm-1350mm above FFL (c) Signage tactile characters must be raised or embossed to a height between 1mm-1.5mm (d) Upper case letter to be between 20mm-55mm (e) Signage is to be contrasting & is to comply with BCA Specification E3.6. Signage Locations The Braille & tactile egress signage is to be located adjacent or on (see above) each door that:- (a) Provides direct egress into a fire isolated stairway (b) Provides direct discharge from the storey into a passageway or lobby (airlock) associated with the fire isolated stairway (c) Provide direct discharge from a fire isolated stairway to open space (discharge door) (d) Forms part of a horizontal exit (--/120/30 fire doors in the fire compartment walls) The below signage is an *example* of what is required - 		
D3.7 Hearing augmentation	This part provides requirements for provision of hearing augmentation in accessible buildings, i.e. to be provided where an in-built amplification system (other than one used for emergencies), is installed: + In an auditorium, conference room, meeting room, or room for judiciary purposes. + At any ticket office, teller's booth, reception area or the like where the public is screened from the service provider. This part provides requirements for provision of hearing augmentation in accessible buildings	**Compliance Readily Achievable**: Applicable to the Wellness Centre and the Class 9b part of the ILU Buildings. Design statement and Access Report to be provided at Construction certificate stage.
D3.8 Tactile indicators	This clause provides requirements for the installation of tactile indicators in buildings required to be accessible and must be provided to warn people who are blind or have a vision impairment that they are approaching a stairway, escalator , passenger conveyor, ramp, overhead obstruction or an accessway meeting a vehicular way, except for areas exempted by D3.4	**Further Information Required**: Stairways and ramps serving the Class 9c part of the RAC Building only will not need to be provided with Tactile Ground Surface Indicators in accordance with AS1428.4.1 – the BCA includes a concession for Residential Aged Care Facilities. Instead, handrails to stairways and ramps are to have raised tactile warning, in the form of a domed button 4-5mm in height and 10-12mm in diameter, and shall be provided on the top of each handrail, 150 (+/-10mm, from the end of the handrail. Notwithstanding the above, Tactile Ground Surface Indicators (TGSIs) are required at the entrance where the pedestrian accessway meets the adjacent vehicular way if a kerb/ kerb ramp is not provided. Consideration may be given to the development of a **Performance Solution** prepared by an Accredited Access Consultant for the omission of TGSIs. Design statement and Access Report to be provided at Construction certificate stage.
D3.11 Ramps	Ramps may be used as part of an accessway where there is a change of level and must comply with the requirements set out in AS1428.1	**Compliance Readily Achievable**: Design statement and Access Report to be provided at Construction certificate stage.

Clause	Reference	Comment
D3.12 Glazing on an accessway	Where there is no chair rail, handrail or transom, all frameless or fully glazed doors, sidelights, including any glazing capable of being mistaken for a doorway or opening, shall be clearly marked for their full width with a solid and non-transparent contrasting line. The contrasting line shall be not less than 75 mm wide and shall extend across the full width of the glazing panel. The lower edge of the contrasting line shall be located between 900 mm and 1000 mm above the plane of the finished floor level. Any contrasting line on the glazing shall provide a minimum of 30% luminance contrast when viewed against the floor surface or surfaces within 2 m of the glazing on the opposite side.	**Compliance Readily Achievable**: Design statement and Access Report to be provided at Construction certificate stage.
	 *Compliant contrasting strip detail*	

Clause	Reference	Comment
SECTION E	**SERVICES AND EQUIPMENT**	
Part E1	***Fire Fighting Equipment***	
E1.3 Fire hydrants	A fire hydrant system in accordance with the provisions of AS2419.1-2005 must be provided to serve a building having a total floor area greater than 500m². The hydrant booster assembly and any external fire hydrants are required to be located greater than 10 metres from an external wall of the building, or affixed to the external wall and protected by a radiant heat shield that has an FRL of 90/90/90 located 2 metres either side and 3 metres above the outlets. Any gas meter must be located a minimum of 2-metres from the hydrant booster outlet. Internal hydrants within fire-isolated stairways are required to have a minimum 1m clearance from the outlet. A required fire services pump room is required to be accessible directly from the road or open space, or from a door opening from a fire isolated exit. Internal Hydrants are to be located within each required Fire Isolated Exit (or alternatively the external stairs in lieu of a fire isolated exit).	**Further Information Required:** The following is to be detailed on the Construction Certificate architectural plans: + The final location of the fire hydrant booster assembly to determine sight line to main entry and distance to building + The location of the hydrant pump room, noting that it is required to be accessible directly from the road or open space, or from a door opening from a fire isolated exit. Given the proposed location of the pump room, the stair to which the pump room connects with and doors opening in to the stair will need to be amended as per the mark-up below so that the pump room is accessed via a fire a fire isolated stairway. + Internal hydrant landing valves within fire-isolated stairways which have a minimum 1m clearance from the outlet. + The location of fire hydrants and plans which illustrate how coverage is achieved. *Note:* The wellness centre is under 500m2 and therefore doesn't require hydrant coverage

Clause	Reference	Comment
	The below departures will need to be addressed as follows: **AMEND PLANS** D1.3 - The stair is to be contained within a fire-isolated shaft and door opening in to the stair are to be self closing -/60/30 fire doors E1.3 - The configuration of the doors to the stair need to be amended so that the door from the Hydrant Pump room opens directly in to the fire isolated stairway E1.5 - Assuming the pump room will contain the sprinkler alarm valves, a **Fire Engineered Performance Solution** will be required to justify the door opening in to a fire isolated stairway in lieu of directly to open space. E1.5 - The pump room is to consist of construction which achieves a 120/120/120 FRL unless sprinkler coverage is extended in to the room	
E1.4 Fire Hose Reels	A fire hose reel system must be provided to serve a building where one or more internal fire hydrants are installed or in a building with a floor area greater than 500m². Fire Hose Reels are to be located within 4m of an exit, or located adjacent to an internal hydrant (other than one within a fire isolated exit). Where system coverage is not achieved by the above, additional FHR may be located in paths of travel to an exit.	**Compliance Readily Achievable:** Fire hose reels are not required within the Class 2 and 9c parts or the Wellness Centre; refer to requirements under Clause E1.6. Fire Hose Reel coverage is required to the Class 7a, and 9b parts of the ILU Building. Fire Hose Reels are to be detailed on the Construction Certificate architectural plans, ensuring that the Fire Hose Reels are located within 4m of an exit and do not pass through fire walls/doors.
E1.5 Sprinklers	A sprinkler system must be installed in a building or part of a building when required by Table E1.5 and comply with Specification E1.5. Sprinkler alarm valves must be located in a secure room or enclosure which has direct egress to a road or open space. Table E1.5 sets out which types of building occupancies and Classes which require having sprinkler systems installed in them.	**Further Information Required:** A Sprinkler system complying with Specification E1.5 and AS2118.1 1999 is required throughout all levels of the RAC Building. A Sprinkler system complying with Specification E1.5 and AS2118.1 1999 is required throughout the class 7a carpark levels of the ILU Buildings. Construction Certificate plans are to demonstrate that Sprinkler alarm valves are located in a secure room or enclosure which has direct egress to a road or open space or alternatively, if the valves are proposed to be located within the pump room,, a **Fire Engineered Performance Solution** may be pursued to justify access to the valves being via a fire isolated stair in lieu of direct from open space.
E1.6 Portable fire extinguishers	Portable fire extinguishers must be provided as listed in Table E1.6 and must be selected, located and distributed in accordance with Sections 1, 2, 3 and 4 of AS 2444 In a class 2 building, portable fire extinguishers must be: + An ABE type fire extinguisher; and + A minimum size of 2.5kg; and + Distributed outside a sole-occupancy unit- a) to serve only the storey at which they are located; and b) so that the travel distance from the entrance doorway of any sole-occupancy unit to the nearest fire extinguisher is not more than 10m.	**Further Information Required:** Portable Fire Extinguishers are to be detailed throughout the development. The Class 2 parts must have extinguishers (minimum 2.5 kg ABE) located within 10m of SOU doorways. The Class 9c parts are to be provided with a combination of H20 and C02 for each smoke compartment. The Class 7a and 9b parts are to be provided with Portable Fire Extinguishers in accordance with Sections 1, 2, 3 and 4 of AS 2444.

Clause	Reference	Comment
E1.9 Fire precautions during construction	In buildings under construction at least one fire extinguisher to suit Class A, B and C fires and electrical fires must be provided at all times on each storey adjacent to a required exit and if the building has reached an effective height of 12m the required hydrant and hose reel systems must be installed, as set out in (b)(ii) and be operational and any required booster connections must be installed	**Compliance Readily Achievable**: Contactor to note.
Part E2	***Smoke Hazard Management***	
E2.2 General requirements for smoke hazard management (including Tables E2.2a & E2.2b)	Class 2 parts: + A smoke alarm system is required throughout the building as per Clause 3 or 4 of Specification E2.2a of the BCA and the relevant provisions of AS 3786 - 2014. Class 9b parts + A zone smoke control system in accordance with AS/NZS 1668.1, if the building has more than one fire compartment; or Class 7a parts: + A mechanical ventilation system in accordance with AS 1668.2 must comply with clause 5.5 of AS/NZS 1668.1 except that— – fans with metal blades suitable for operation at normal temperature may be used; and – the electrical power and control cabling need not be fire rated. Class 9c building: + The mechanical ventilation systems in the building are required to be designed in accordance with AS/NZS 1668.2 (A/C systems) incorporating fire/smoke dampers where air handling ducts penetrate any building elements separating fire/smoke compartments served. + A smoke detection and alarm system is required throughout the building as per Clause 4 of Specification E2.2a of the BCA and the relevant provisions of AS 1670.1 – 2015. Automatic Shutdown of any air handling system upon activation of the Automatic Smoke Detection System and Sprinkler System will also be required. + Manual call points are required to be installed in paths of travel so that no point on the floor is more than 30m from a manual call point. + An annunciator/mimic panel is required in every smoke compartment.	**Compliance Readily Achievable:** The current design of the fire isolated stairs within the RAC Building necessitates stair pressurisation. If external stairs complying with D1.8 pursued, stair pressurisation will not be required. Design certification to be provided at the Construction Certificate stage.
E2.3 Provision for special hazards	Additional smoke hazard management measures may be necessary due to the nature of a buildings special characteristic, its use, the nature of materials being stored in them and special mix of classifications.	**Note only**
Part E3	***Lift Installations***	
E3.2 Stretcher facilities in lifts	Stretcher facilities, complying with this clause, must be provided in lifts in at least one emergency lift as required by E3.4 or in a storey above an effective height of 12m.	**Compliance Readily Achievable**: By virtue of lifts serving stories with an effective height greater than 12m at least one of the lifts (which serve each storey) must be designed to accommodate a stretcher facility i.e. must accommodate a raised stretcher with a patient lying on it horizontally by providing a clear space not less than 600mm wide x 2000mmm long x 1400mm high above the floor level.
E3.3 Warning against use of lifts in fire	Warning signs required be provided must be displayed where they can be readily seen and must comply with the details and dimensions of Figure 3.3	**Compliance Readily Achievable:** Design certification to be provided at the Construction Certificate stage.

Clause	Reference	Comment
E3.5 Landings	Access and egress to and from lift well landings must comply with the Deemed-to-Satisfy Provisions of Part D.	**Compliance Readily Achievable:**
E3.6 Passenger lifts	In an accessible building, every passenger lift must be one of the types identified in Table E3.6a, have accessible features in accordance with Table E3.6b and not rely on a constant pressure device for its operation if the lift car is fully enclosed.	**Compliance Readily Achievable:** Design certification to be provided at the Construction Certificate stage.
E3.7 Fire service controls	In passenger lifts designed in accordance with AS 1735 Parts 1 and 2, all lift cars serving any storey above an effective height of 12m must be provided with fire service controls.	**Compliance Readily Achievable:** Design certification to be provided at the Construction Certificate stage.
E3.8 Aged care buildings	Where residents in a Class 9c building are on levels which do not have direct access to a road or open space, the building must have at least one lift to accommodate a stretcher or a ramp in accordance with AS 1428.1 leading to an exit.	**Compliance Readily Achievable:** Design certification to be provided at the Construction Certificate stage.
E3.9 Fire service recall operation switch	Each group of lifts must be provided with one fire service control switch (required by Clause E3.7 above) that activates the fire service recall operation. This clause details the switch, the labelling, the key and operation procedures for a fire service recall operation	**Compliance Readily Achievable:** Design certification to be provided at the Construction Certificate stage.
E3.10 Lift car fire service drive control switch	The lift car fire service drive control switch required by E3.7 must be activated from within the lift car. This clause details the switch, the initiation, the labelling and operation for the fire service drive control switch.	**Compliance Readily Achievable:** Design certification to be provided at the Construction Certificate stage.
Part E4	***Emergency Lighting, Exit Signage and Warning Systems***	
E4.2 Emergency lighting	This clause details when emergency lighting must be installed in Class 2 to 9 buildings. The requirements for buildings and parts of buildings are detailed in sub-clauses (a) to (i) and each sub-clause must be considered as more than one may apply to any single building.	**Compliance Readily Achievable:** Design certification to be provided at the Construction Certificate stage.
E4.4 Design and operation of emergency lighting	Every required emergency lighting system must comply with AS2293.1	**Compliance Readily Achievable:** Design certification to be provided at the Construction Certificate stage.
E4.5 Exit signs	An exit sign must be clearly visible to persons approaching the exit and must be installed on, above or adjacent to each door providing egress from a building. Sub-clauses (a) to (d) set out the situations where exit signs are required to be installed.	**Compliance Readily Achievable:** Design certification to be provided at the Construction Certificate stage.
E4.6 Direction signs	If an exit is not readily apparent to persons occupying or visiting the building then exit signs must be installed in appropriate positions in corridors, hallways, lobbies, and the like, indicating the direction to a required exit.	**Compliance Readily Achievable:** Design certification to be provided at the Construction Certificate stage.
E4.8 Design and operation of exit signs	Every required exit sign must comply with AS/NZS 2293.1 and be clearly visible at all times when the building is occupied by any person having the legal right of entry into the building.	**Compliance Readily Achievable:** Design certification to be provided at the Construction Certificate stage.

Clause	Reference	Comment

Clause	Reference	Comment
SECTION F	**HEALTH AND AMENITY**	
Part F1	***Damp & Weather Proofing***	
F1.1 Stormwater drainage	Stormwater drainage must comply with AS/NZ 3500.3	**Compliance Readily Achievable:** Design certification to be provided at the Construction Certificate stage.
F1.5 Roof coverings	This clause details the materials and appropriate standards, with which roofs must be covered with. The roofing requirements are set out in sub-clauses (a), (b), (c), (d), (e) & (f) which set out the types of materials that may be used and the adopted Australian Standards that apply to their quality and installation.	**Compliance Readily Achievable:** Design certification to be provided at the Construction Certificate stage.
F1.6 Sarking	Sarking-type materials used for weatherproofing of roofs must comply with AS/NZS 4200 parts 1 and 2	**Compliance Readily Achievable**: Details to be included into the design.
F1.7 Waterproofing of wet areas in buildings	This clause requires that wet areas in Class 2 to 9 buildings must be waterproofed. It prescribes the standards to which the work must be carried on the construction of rooms containing urinals and their installation.	**Compliance Readily Achievable**: Details to be included into the design.
F1.9 Damp-proofing	(a) This sub-clause requires that moisture from the ground must be prevented from reaching certain parts of buildings as listed. (b) This sub-clause requires that all damp-proofing materials and termite shields used as damp-proofing must comply with AS/NZS 2904 and AS 3660.1. (c) This sub-clause lists the buildings and parts of building that do not need to comply with (a).	**Compliance Readily Achievable**: Details to be included into the design.
F1.10 Damp-proofing of floors on the ground	If the floor of a room is laid on the ground or on fill, moisture from the ground must be prevented from reaching the upper surface of the floor and adjacent walls by the insertion of a vapour barrier in accordance with AS 2870. Damp-proofing need not be provided if weatherproofing is not required or the floor is the base of a stair, lift or similar shaft which is adequately drained by gravitation or mechanical means.	**Compliance Readily Achievable**: Details to be included into the design.
F1.13 Glazed assemblies	Glazed assemblies in an external wall must comply with AS2047 requirements for resistance to water penetration for windows, sliding doors with a frame, adjustable louvres, shop fronts and windows with one piece framing	**Compliance Readily Achievable**: Details to be included into the design.

Clause	Reference	Comment
Part F2	***Sanitary & Other Facilities***	
F2.1 Facilities in residential buildings	In a Class 2 building: + Each residential sole occupancy unit is required to be provided with a kitchen sink with facilities for cooking, a bath or shower, a closet pan and washbasin, a washtub and a space for a washing machine and drier. + In a residential building containing more than 10 sole-occupancy units a closet pan and washbasin in a room at or near ground level must be provided and be accessible to employees without entering a sole-occupancy unit. In the Class 9c part: In addition to the proposed sanitary facilities and showers provided to each of the units, the following facilities are required to be provided within the building: + A suitable bath, fixed or mobile, + One clinical hand washing basin for each 16 residents or part thereof, + The bathroom facilities for residents are to be provided with appropriate hot water regulation systems to control hot water temperature in accordance with AS/NZS3666.1 and Part F2.7 of the BCA, + At least one slop-hopper device (*or equivalent devices*) is to be provided at each of the Class 9c resident occupied floors to facilitate emptying of containers of sewage or dirty water; and with a flushing apparatus, tap and grating.	**Further Information Required**: In this instance current architectural documentation hasn't allocated space in the Class 2 parts for accessible sanitary facilities serving staff nor the class 9c RACF with space to house the facilities required by this clause. Plans submitted with the Construction Certificate are to detail compliance with the requirements of this clause.
F2.2 / F2.3 – Calculation of Number of Occupants & Facilities	This clause sets out the requirements for the calculation of the number of occupants and the number of sanitary facilities required to be installed in Class 2 to 9 buildings. Sanitary facilities are required to be provided for the employees of the commercial tenancies. If not more than 10 persons are employed a single unisex facility may be provided, the facility is required to comply as an accessible sanitary facility with AS 1428.1-2009.	**Further Information Required**: Plans illustrating the number WC's, urinals and wash basins provided throughout the 9b parts are required to be submitted at the Construction Certificate stage to determine the population catered for. Alternatively, projected population numbers can be provided at an earlier stage which can be used to project the required number of WC's, urinals and washbasins. Note: The sanitary facility adjacent the consulting room in building A is required to be designated male/female.
F2.4 Accessible sanitary facilities	Accessible unisex sanitary compartments must be provided, in accordance with Table F2.4(a) and unisex showers must be provided in accordance with Table F2.4(b), in buildings or parts that are required to be accessible. The details for the provision of disable facilities and the standard, AS 1428.1, are set out in sub-clauses (a) to (i).	**Compliance Readily Achievable**: Accessible sanitary facilities are to be provided in accordance with Table F2.4(b). Design statement and Access Report to be provided at Construction certificate stage.

Clause	Reference	Comment
F2.5 Construction of sanitary compartments	Other than in an early childhood centre, sanitary compartments must have doors and partitions that separate adjacent compartments and extend – + from floor level to the ceiling in the case of a unisex facility; or + a height of not less than 1.5m above the floor if primary school children are the principal users; or + 1.8m above the floor in all other cases. The door to a fully enclosed sanitary compartment must open outwards; or slide: or be readily removable from the outside of the sanitary compartment, unless there is a clear space of at least 1.2m, measured in accordance with Figure F2.5 between the closet pan within the sanitary compartment and the doorway.	**Compliance Readily Achievable**: Details to be included into the design.
F2.8 Waste management	In a Class 9c building, the following facilities must be provided for every 60 beds or part thereof on each storey containing resident use areas: (i) one slop-hopper or other device other than a water closet pan or urinal for the safe handling and disposal of liquid and solid wastes with a flushing apparatus, tap and grating; and (ii) an appliance for the disinfection of pans or an adequate means to dispose of receptacles	**Further Information**: Details to be included into the design of the RAC Building.

Clause	Reference	Comment
Part F3	***Room Sizes***	
F3.1 Height of rooms and other spaces.	The minimum ceiling heights within the development are as follows: <u>Class 2 part</u> + Kitchen, laundry or the like – 2.1m + Corridor or passageway – 2.1m + A habitable room, excluding kitchen – 2.4m <u>Class 7a</u> + Generally – 2.4m + Carparking area – 2.1m + Corridor, passageway, or the like — 2.1 m; and <u>Class 9b part</u> + A part that accommodates not more than 100 persons — 2.4 m; and + A part that accommodates more than 100 persons — 2.7 m; <u>Class 9c part</u> + A kitchen, laundry or the like – 2.1m, + A corridor, passageway or the like – 2.4m, + A habitable room excluding a kitchen – 2.4m, + A commercial kitchen – 2.4m, + Offices, hairdresser, consultation rooms etc. – 2.4m, <u>All building parts</u> + Bathroom, shower room, sanitary compartment, airlock, pantry, store room, garage or the like — 2.1 m; + Commercial kitchen – 2.4m; + Above a stairway, ramp, landing or the like — 2 m measured vertically above the nosing line of stairway treads or the floor surface of the ramp, landing or the like.	**Compliance Readily Achievable**: Detailed sections throughout the building are required to be provided for review at the Construction Certificate stage.
Part F4	***Light & Ventilation***	
F4.1 Natural lighting	Natural lighting must be provided in: + Class 2 buildings – to all habitable rooms. + Class 9c buildings – all rooms used for sleeping purposes.	**Further Information Required:** Windows are to be detailed on the Construction Certificate plans for: + All habitable rooms within Class 2 SOUs. + All rooms used for sleeping purposes in the Class 9c parts.
F4.2/F4.3 Method and extent of achieving natural lighting	Windows or the like are to have an aggregate light transmitting area of not less than 10% of the floor area of the room. In the Class 9c part, windows must be transparent and located in an external wall with a window sill not higher than 1m above the floor level and where the window faces an allotment, another building or structure, it must not be located less than 3m away to maintain amenity to the space.	**Further Information Required**: Compliance with the requirements of this Clause is to be demonstrated on the Construction Certificate plans.
F4.4 Artificial lighting	Artificial lighting must be provided in required stairways, passageways, and ramps and where natural light is insufficient. The artificial lighting system must comply with AS/NZS 1680.0.	**Compliance Readily Achievable:** Design certification to be provided at the Construction Certificate stage.

Clause	Reference	Comment
F4.5 Ventilation of rooms	A habitable room, office, shop, factory, workroom, sanitary compartment, bathroom, shower room, laundry and any other room occupied by a person for any purpose must have natural ventilation complying with F4.6 **or** a mechanical or air-conditioning system complying with AS1668.2 and AS/NZS 3666.1. Note: NSW F4.5(b) a mechanical ventilation or air-conditioning system complying with AS 1668.2 – the reference to AS/NZS 2666.1 is deleted from the BCA in NSW as the need to comply with this standard is regulated under the relevant section of the Public Health Act 1991.	**Compliance Readily Achievable:** Design certification to be provided at the Construction Certificate stage.
F4.6/F4.7 Natural ventilation	Natural ventilation must consist of openings, windows, doors or other devices which can be opened— with a ventilating area not less than 5% of the floor area of the room required to be ventilated. Additionally, open to a suitably sized space open to the sky or an adjoining room in accordance with F4.7.	**Compliance Readily Achievable:** Design certification to be provided at the Construction Certificate stage.
F4.8 Restriction on position of water closets and urinals	A room containing a water closet pan or urinal must not open directly into a kitchen or pantry, public dining room or restaurant, a dormitory in a Class 3 building, a room used for public assembly (which is not an early childhood centre, primary school or open spectator stand) or a workplace normally occupied by more than 1 person	**Compliance Readily Achievable**
F4.9 Airlocks	If a room containing a closet pan or urinal is prohibited under F4.8 form opening directly into another room then the provisions of sub-clauses (a) & (b) apply relating to the requirements of airlocks and mechanical ventilation standards	**Compliance Readily Achievable**
F4.12 Kitchen local exhaust ventilation	A commercial kitchen must be provided with a kitchen exhaust hood complying with AS 1668.1 and 1668.2	**Compliance Readily Achievable:** Design certification to be provided at the Construction Certificate stage.
Clause	Reference	**Comment**
SECTION G	**Ancillary Provisions**	
G1.1 Swimming Pools	This Section applies to the technical construction requirements for barriers to restrict access to swimming pools, subject to out-of-ground pool walls and the walls of above ground pools not being considered to be effective barriers. The Swimming Pools Act 1992 and Reg 2008 regulate the circumstances in which a barrier is required and prevail in the case of any inconsistency.	**Compliance Readily Achievable**: Pool fencing in accordance with AS1926.1 will be required to be implemented

Clause	Reference	Comment
SECTION J	**ENERGY EFFICIENCY**	
BASIX	For class 2 buildings	**Compliance Readily Achievable**: BASIX certification and details on plans to be provided with the Construction Certificate
J1 Building Fabric	The provision of insulation of the building envelope will be required in the proposed building, in accordance with Clauses J1.0 to J1.6, and the Tables therein, including Thermal Construction General, Roof and Ceiling Construction, Rooflights, Walls, and Floors. Design details and/or certification of design will be required to be provided in this regard.	**Compliance Readily Achievable**: Design certification and Section J report to be provided at the Construction Certificate stage.

Clause	Reference	Comment
J2 Glazing	Glazing within the external building envelope will be required to be assessed/designed to achieve compliance with Clauses J2.0 to J2.5, including the Tables therein, having regard to the maximum aggregate air-conditioning energy attributable to each façade of the proposed building. A calculation demonstrating that the proposed design of the building complies with the requirements of Part J2 is required to be provided in this regard.	**Compliance Readily Achievable**: Design certification and Section J report to be provided at the Construction Certificate stage.
J3 Building sealing	The proposed building envelope will be required to be sealed to prevent air infiltration in accordance with the requirements of Clauses J3.0 to J3.6. Details or certification that the proposed building design complies with the requirements of Part J3 is required to be provided	**Compliance Readily Achievable**: Design certification and Section J report to be provided at the Construction Certificate stage.
J5 Air-conditioning & ventilation systems	Details and/or design certification which confirm that any proposed air-conditioning system or unit within the proposed building achieves compliance with the relevant requirements of Part J5 will be required to be provided from the mechanical engineer.	**Compliance Readily Achievable**: Design certification and Section J report to be provided at the Construction Certificate stage.
J6 Artificial lighting & power	Details and/or design certification which confirm that all artificial lighting, power control, and boiling/chilled water units within the proposed building achieves compliance with the relevant requirements of Part J6 will be required to be provided from the electrical engineer	**Compliance Readily Achievable**: Design certification and Section J report to be provided at the Construction Certificate stage.
J7 Hot water supply & swimming pool & spa pool plant	Details and/or design certification which confirm that any proposed hot water supply system within the proposed building achieves compliance with the relevant requirements of Part J7 (Section 8 of AS 3500.4) will be required to be provided from the hydraulic engineer	**Compliance Readily Achievable**: Design certification and Section J report to be provided at the Construction Certificate stage.
J8 Access for maintenance & facilities for monitoring	See NSW Subsection J8 for access to maintenance. Access must be provided to all plant, equipment and components that require maintenance in accordance with Part I2.	**Compliance Readily Achievable**: Design certification and Section J report to be provided at the Construction Certificate stage.

APPENDIX 2

PRELIMINARY FIRE SAFETY SCHEDULE

RAC BUILDING		
Statutory Fire Safety Measure	**Design / Installation Standard**	**Proposed**
Access Panels, Doors & Hoppers	BCA Clause C3.13 & AS 1530.4 – 2014 and Manufacturer's specifications	✓
Alarm Signalling Equipment	AS 1670.3 – 2004	✓
Automatic Fail Safe Devices	BCA Clause D2.21	✓
Automatic Fire Detection & Alarm System	BCA Spec. E2.2a & AS 1670.1 – 2015	✓
Automatic Fire Suppression Systems	BCA Spec. E1.5 & AS 2118.4 –2012	✓
Building Occupant Warning System activated by the Sprinkler System	BCA Spec. E1.5, Clause 8 and / or Clause 3.22 of AS 1670.1 – 2015	✓
Emergency Lighting	BCA Clause E4.4 & AS 2293.1 – 2005	✓
Emergency Evacuation Plan	AS 3745	✓
Exit Signs	BCA Clauses E4.5, E4.6 & E4.8; and AS 2293.1 – 2005	✓
Fire Blankets	AS 3504 – 1995 & AS2444 – 2001	✓
Fire Dampers	BCA Clause C3.15, AS 1668.1 – 2015 & AS 1682.1 & 2 – 1990 and manufacturer's specification	✓
Fire Doors	BCA Clause C2.12, C2.13, C3.3 C3.4, C3.5, C3.7, C3.8 & C3.11; and AS 1905.1 – 2015 and manufacturer's specification	✓
Fire Hydrant Systems	Clause E1.3 & AS 2419.1 – 2005	✓
Fire Seals	BCA Clause C3.15, AS 1530.4 – 2014 & AS 4072.1 – 2005 and manufacturer's specification	✓
Lightweight Construction	BCA Clause C1.8 & AS 1530.4 – 2015 and manufacturer's specification	✓
Mechanical Air Handling Systems	BCA Clause E2.2, AS/NZS 1668.1 – 2015 & AS 1668.2 – 2012	✓
Paths of Travel	EP&A Regulation Clause 186	✓
Portable Fire Extinguishers	BCA Clause E1.6 & AS 2444 – 2001	✓
Pressurising Systems	BCA Clause E2.2 & AS/NZS 1668.1 – 2015	✓
Smoke Hazard Management Systems	BCA Part E2 & AS/NZS 1668.1 –2015	✓
Smoke Dampers	AS/NZS 1668.1 – 2015	✓
Smoke Doors	BCA Spec C3.4 & C2.5	✓
Wall-Wetting Sprinklers	BCA Clause C3.4	✓
Warning & Operational Signs	Clause 183 of the EP&A Regulation 2000, AS 1905.1 – 2015, BCA Clause C3.6, D2.23, D3.6, E3.3	✓
Fire Engineered Performance Solutions	TBC	✓

WELLNESS CENTRE		
Statutory Fire Safety Measure	**Design / Installation Standard**	**Proposed**
Emergency Lighting	BCA Clause E4.4 & AS 2293.1 – 2005	✓
Exit Signs	BCA Clauses E4.5, E4.6 & E4.8 and AS 2293.1 – 2005	✓
Paths of Travel	EP & A Regulation Clause 186	✓
Portable Fire Extinguishers	BCA Clause E1.6 & AS 2444 – 2001	✓

ILU BUILDINGS		
Statutory Fire Safety Measure	**Design / Installation Standard**	**Proposed**
Access Panels, Doors & Hoppers	BCA Clause C3.13 & AS 1530.4 – 2014 and Manufacturer's specifications	✓
Alarm Signalling Equipment	AS 1670.3 – 2004	✓
Automatic Fail Safe Devices	BCA Clause D2.21	✓
Automatic Fire Detection & Alarm System	BCA Spec. E2.2a & AS 1670.1 – 2015	✓
Automatic Fire Suppression Systems (class 7a parts)	BCA Spec. E1.5 & AS 2118.1-1999	✓
Building Occupant Warning System activated by the Sprinkler System	BCA Spec. E1.5, Clause 8 and / or Clause 3.22 of AS 1670.1 – 2015	✓
Access Panels, Doors & Hoppers	BCA Clause C3.13 & AS 1530.4	✓
Alarm Signalling Equipment	AS 1670.3 – 2004	✓
Automatic Fire Suppression System (TBC)	BCA Clause E1.5 and AS 2118.1-1999	✓
Building Occupant Warning System	BCA Clause 3.22 of AS 1670.1 – 2015	✓
Emergency Lighting	BCA Clause E4.4 & AS 2293.1 – 2005	✓
Exit Signs	BCA Clauses E4.5, E4.6 & E4.8 and AS 2293.1 – 2005	✓
Fire Doors	BCA Clause C2.12, C2.13, C3.2, C3.4, C3.5, and AS 1905.1 – 2015	✓
Fire Hose Reels (class 7a & 9b parts)	BCA Clause E1.4 & AS 2441 – 2005	✓
Fire Hydrant Systems	Clause E1.3 & AS 2419.1 – 2005	✓
Fire Seals	BCA Clause C3.15 & AS 1530.4 & AS 4072.1 – 2005	✓
Paths of Travel	EP & A Regulation Clause 186	✓
Portable Fire Extinguishers	BCA Clause E1.6 & AS 2444 – 2001	✓
Smoke Dampers	AS/NZS 1668.1 – 2015	✓
Smoke Doors	BCA Spec C3.4 & C2.5	✓
Warning & Operational signs	Clause 183 of the EP&A Regulation 2000, AS 1905.1 – 2015, BCA Clause C3.6, D2.23, D1.11, D3.6, E3.3	✓
Fire Engineered Performance Solutions	TBC	✓

APPENDIX 3

SPECIFICATION C1.1 - FRL OF BUILDING ELEMENTS

TABLE 3 - TYPE A CONSTRUCTION		
Building Element	**Class 2**	**Class 7a, 9b & 9c**
Loadbearing external wall (including any column and other building element incorporated therein)		
+ Less than 1.5m to a fire source feature	90/90/90	120/120/120
+ 1.5 to less than 3m to a fire source feature	90/60/60	120/90/90
+ 3m or more to a fire source feature	90/60/30	120/60/30
Non-Loadbearing external wall		
+ Less than 1.5 m to a fire source feature	-/90/90	–/120/120
+ 1.5m to less than 3 m to a fire source feature	–/60/60	–/90/90
+ 3m or more to a fire source feature	–/–/–	–/–/–
External column not incorporated in an external wall		
+ Less than 3m to a fire source feature	90/–/–	120/–/–
+ 3m or more to a fire source feature	–/–/–	–/–/–
Common walls and fire walls	90/90/90	120/120/120
Fire-resisting lift and stair shafts		
+ Loadbearing	90/90/90	120/120/120
+ Non-loadbearing	-/90/90	–/120/120
Internal walls bounding sole occupancy units		
+ Loadbearing	90/90/90	120/–/–
+ Non-loadbearing	–/60/60	–/–/–
Internal walls bounding public corridors, public lobbies and the like:		
+ Loadbearing	90/90/90	120/–/–
+ Non-loadbearing	–/60/60	–/–/–
Ventilating, pipe, garbage, and like shafts not used for the discharge of hot products of combustion		
+ Loadbearing	90/90/90	120/90/90
+ Non-loadbearing	–/90/90	–/90/90
Other loadbearing internal walls, beams trusses and columns	90/–/–	120/–/–
Floors	90/90/90	120/120/120
Roofs	90/60/30	120/60/30

Notes:

1. Any lightweight construction in a fire wall or an internal wall required to have an FRL is to comply with Specification C1.8.
2. Any insulation installed in the cavity of the wall is required to be non-combustible.
3. Where a combustible material is used as a finish or lining to a wall or roof, or awning, to a building element required to have an FRL, the material must comply with the fire hazard properties prescribed under BCA Specification C1.10 and it is not located directly above an exit so as to make the exit unusable, and does not otherwise constitute an undue risk of fire spread via the façade of the building.
4. Fire rated shafts are required to be enclosed at the top and bottom by construction having an FRL of not less than what the shaft requires (in both directions)
5. The concession granted under clause C3.5 results in the roof of the building not being required to be fire rated (the building is provided throughout with sprinklers).
6. Lift shafts are required to be enclosed at the top of the shaft with fire rated construction having an FRL in accordance with the table above.
7. Fire isolated exits are to be provided with a fire rated "lid" that achieves an FRL in accordance with the table above.
8. Where roof lights are proposed they are required to be located not less than 3 metres from a roof light in an adjoining fire separated part; and must not be more than 20% of the area of the roof.
9. Any loadbearing internal walls or loadbearing fire walls are to be masonry or concrete.
10. External walls must be of non-combustible construction. Non-loadbearing parts of an external wall that are more than 3m from a fire source feature need not be fire rated.

TABLE 5 - TYPE C CONSTRUCTION		
Building Element	**Class 2**	**Class 7a, 9b & 9c**
Loadbearing external wall (including any column and other building element incorporated therein)		
+ Less than 1.5m to a fire source feature	90/90/90	90/90/90
+ 1.5 to less than 3m to a fire source feature	–/–/–	60/60/60
+ 3m or more to a fire source feature	–/–/–	–/–/–
External column not incorporated in an external wall		
+ Less than 1.5m to a fire source feature	90/–/–	90/–/–
+ 1.5 to less than 3m to a fire source feature	–/–/–	60/–/–
+ 3m or more to a fire source feature	–/–/–	–/–/–
Common walls and fire walls	90/90/90	90/90/90
Internal walls		
+ Bounding public corridors, public lobbies and the like	60/60/60	-/-/-
+ Between or bounding sole-occupancy units	60/60/60	-/-/-
+ Bounding a stair if required to be rated	60/60/60	60/60/60
Roofs	-/-/-	-/-/-